



# ABSTRACTS 2024 RÉSUMÉS



University  
of Manitoba



**CIMVHR**  
Canadian Institute for Military  
and Veteran Health Research

**ICRSMV**  
L'Institut canadien de recherche sur  
la santé des militaires et des vétérans



THE UNIVERSITY OF  
WINNIPEG

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**FAMILIES**

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**PROCHES**



# FAMILIES

## PRIMARILY MENTAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1E03: Serving Families of those who Served after Tragedy: A scoping review of formal psychosocial support programs for defence and public safety families

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**Introduction:** When a disaster occurs, the impacts ripple well beyond the population most directly exposed. Personnel who work in safety and security are at heightened risk of injury, illness or death as the rate of disasters increases globally. Though defence and public safety (DPS) organizations may provide psychosocial support to serving personnel following such incidents, DPS families are often left without support. Despite a continuous call to action for DPS family support, there remains a significant lack of support tailored to their specific needs. As such, it is necessary to pull from other disaster-impacted populations as a starting point to develop critically needed psychosocial support programs for DPS families following disasters in their occupational communities. In response to this need, this scoping review aims to identify and describe formal psychosocial support in disaster-impacted populations to aid in the development of tailored psychosocial support programs for DPS families.

**Methods:** This scoping review has been guided by Arksey and O'Malley's five step framework. Search strategies were developed with consultation with a research librarian for CINAHL, MEDLINE, and PsycINFO. Search terms included famil\*, disaster survivor\*, secondary survivor\*, disaster victim\*, community support\*, psychological first, psychoeducation, psychosocial support\*, disaster\*, terror\*, critical incident\*, and tragic event\*. 4,128 studies are currently being screened in Covidence systematic review software. Blinded title and abstract screening are complete, and blinded full text review is underway to assess inclusion of 257 potential articles. Final search and article inclusion will be documented in a PRISMA diagram.

**Results:** The dataset will provide information on existing psychosocial support for disaster-affected populations. Data extraction will focus on program content, delivery, timing and indicators of program effectiveness. Evidence synthesis will focus on using these existing psychosocial support programs as a starting point to develop psychosocial support programs that are formally tailored to the specific needs of DPS families following a tragedy in the occupational community.

**Conclusions:** DPS families feel the ripple effects of disasters in the occupational communities and require psychosocial support programs that can be implemented by DPS organizations following disasters. This scoping review demonstrates psychosocial support programs that exist for another population that may be adaptable to the needs of DPS families. The results of this scoping review will be integrated with an exploration of the psychosocial needs of DPS families following tragedy to develop a series of tailored recommendations for psychosocial support for families when a tragedy occurs.

#### 2D03: Lived Expertise Engagement within a Co-Principal Investigator Research Model: Part 1

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<sup>1</sup>The Atlas Institute; <sup>2</sup>Mount Saint Vincent University

**Brief Description:** A novel engagement model, which includes lived expertise as co-principal investigators, has been piloted within a qualitative research study exploring the unique challenges related to military culture that the Families of Canadian Armed Forces (CAF) members often face, as retrospectively shared by adult children of CAF Veterans. The children of military members, including Veterans and those currently serving, face unique challenges related to military culture, including frequent re-locations, prolonged separations for military operations and training, and risks associated with military service. The lived expertise inclusion not only enhances the relevance and applicability of the research but also ensures that the voices and insights of those directly affected by the concepts being studied are central to the process, within a leadership role. This presentation will showcase the strengths, opportunities, facilitators and barriers to employing a research approach that embeds lived expertise within the research leadership team.

**Patient Population:** The target audience for the resources is currently serving military members, Veterans and Veteran Family members as well as researchers who want to learn about engagement with lived experience, employing a co-principal investigator approach. As this study focuses on the experience of the Family members of Veterans, the lived expertise co-principal investigator is a spouse of a Veteran, the daughter of a Veteran and the mother of a CAF member.

**Results:** This co-principal investigator model of engagement not only amplifies the relevance and validity of the research but also underscores the central importance of the viewpoints and insights of individuals directly affected by, and knowledgeable about military and Veteran lifestyle and service. Furthermore, a lived experience co-principal investigator model fosters greater empathy, authenticity, and cultural sensitivity within the research team, ultimately leading to more comprehensive and meaningful outcomes that have been co-discov-

ered by members of the community, creating more potential to drive positive change in society.

**Conclusions:** Along with its challenges, barriers and opportunities, having a lived expertise co-principal investigator in research enriches the study by offering firsthand insights and perspectives. Their engagement ensures that the research remains relevant, empathetic and culturally sensitive, fostering meaningful outcomes and potential community impact.

### **3D01: Supporting Children whose Parents have a Service-related Moral Injury: Co-created knowledge translation storybook project**

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**Introduction:** Service-related moral injuries can negatively impact family life, with children being silent victims. Despite the best intentions and strong parenting skills, parents with a moral injury (MI) can face several barriers to parenting. Parents can struggle to connect and communicate effectively with their children. Also, children can struggle to understand their parent's behaviour and feelings. Stakeholders identified that, to date, there are no evidence-based MI resources to support children's understanding and coping skills. To address this gap, our international interdisciplinary team posed a question: *How can the use of a storybook assist children from service families to build their knowledge and understanding of their parent's behaviour and feelings due to their MI?* We co-created free evidence-based resources, including a storybook for the children and modules for their parents and support workers. The suitability of the draft resources was tested through a broad mixed-methods online stakeholder survey, then piloted with parents and their clinicians within the target families.

**Methods:** Ethics approval was gained from the University of New England, then the Kings College London. To co-create the resources, we involved partner organisations, clinicians and lived-experience voices. After refinement, drafts of the book were provided to stakeholders to provide feedback via an online mixed methods survey using Qualtrics. The storybook was shared with up to 25 UK parents who self-reported experiencing potentially morally injurious events and had children (6-18 years). Families were asked to provide feedback on the storybook via video conferencing.

**Results:** The broad online stakeholder survey results yielded helpful feedback about the usefulness of the resort. They reported about the: timeliness of the resource; effectiveness of the explanations of MI for children and their parents, support workers and clinicians; illustrations; story messaging; and the impact on individuals and families. In the UK pilot, veteran

families reported the negative impacts of parental MI on family life, including withdrawal and the presentation of risk-taking and aggressive behaviours. Parents and clinicians considered whether targeted resources might effectively support these children.

**Conclusions:** This knowledge translation and research provide initial evidence of the far-reaching deleterious impacts of MI on the functioning of service families. The combined feedback improved the final resources. Our results reveal the need for comprehensive screening of patients for the effects of MI on daily functioning in subsequent studies, increasing assessments to include more than psychological symptoms, and the possible benefits of evidence-based resources for families during clinical treatment.

### **3D02: School Climate and Academic Achievement: A cross-sectional study comparing the perceptions of Canadian military-connected youth with other Canadian youth**

Hill, Shannon, PhD<sup>1</sup>; Cramm, Heidi, PhD<sup>1</sup>; King, Nathan, PhD<sup>1</sup>; King, Matt, PhD<sup>1</sup>; Craig, Wendy, PhD<sup>1</sup>; Pickett, William, PhD<sup>2</sup>; Mahar, Alyson, PhD<sup>1</sup>

<sup>1</sup>Queen's University; <sup>2</sup>Brock University

**Introduction:** Youth in Canadian military-connected families have reported worse mental health and greater engagement in risk-taking behaviours than youth in non-military connected families. For military-connected students, participation in school could have positive influences on mental health and well-being; similarly, poor mental health could negatively impact academic achievement. Child and youth education has been consistently reported as one of the dominant reasons for release from the Canadian Armed Forces (CAF). Therefore, we sought to examine academic achievement and school climate perceptions of Canadian military-connected youth relative to non-military connected youth.

**Methods:** This cross-sectional study used data from the 2017/18 Canadian sample of the Health Behaviour in School-Aged Children (HBSC) survey, a nationally representative survey of school-attending youth in grades 6-10. Questionnaires administered in classroom settings collected information about current or previous parental or caregiver service in the military and indicators of academic success, school belonging, and school perceptions. Multivariable log-binomial regression models estimated the association between military family connection and each indicator as relative risks (RR) and 95% confidence intervals (CI), accounting for survey weights and clustering by school. Effect modification by grade and sex was investigated.

**Results:** This study included 19,137 students; 1,794 reported a parent/caregiver military connection. Overall, half of military-connected youth felt pressured by schoolwork, one third

reported they did not like school, and one in five felt they didn't belong at their school. After adjusting for grade, sex, and family affluence, youth connected to military families more often reported lower academic achievement and negative perceptions of school compared to youth from non-military families. Youth with a military family connection reported slightly more schoolwork pressure (RR: 1.06; 95% CI: 1.00-1.13) and having lower average marks over the past year (RR: 1.10; 95% CI: 0.98-1.23). Youth connected to military families were 1.2 times more likely to report not liking school, (95% CI: 1.08-1.32), 1.23 times more likely to perceive low support from teachers (95% CI: 1.12-1.35), and 1.55 times more likely to feel they do not belong at their school (95% CI: 1.38-1.75). These findings did not vary by grade or sex.

**Conclusions:** Education is a social determinant of health. Addressing and supporting educational achievement and school experiences of military-connected students is fundamental for improving health and well-being. Further research is needed within Canada to understand factors associated with academic achievement and perceptions of school climate to better understand how to support the educational experiences of military-connected youth.

### 3D03: Qualitative Study on the Experiences of Adult Children of Canadian Armed Forces Veterans

*Norris, Deborah, PhD<sup>1</sup>; Lamrock, Laryssa<sup>2</sup>; McDonald, Cassandra, MEd<sup>1</sup>; Reeves, Kathryn, BA<sup>1</sup>; Dupuis, Gabrielle<sup>2</sup>*

<sup>1</sup>Mount Saint Vincent University; <sup>2</sup>Atlas Institute for Veterans and Families

**Introduction:** The children of military members, including Veterans and those currently serving, face unique challenges related to military culture, including frequent re-locations, prolonged separations for military operations and training, and risks associated with military service. For some children, in particular, these challenges build capacity and enhance resilience(y). However, it is not known if these capacities are sustained through to adulthood, nor are the mechanisms facilitating outcomes understood. Retrospective accounts of the childhood experiences of an understudied cohort, the adult children of CAF Veterans, provide unique insights into how their early experiences influence their adult lives. The purposes of this qualitative study were to describe the experiences of adult children of CAF veterans, to identify long-term outcomes of military service for family members from the perspectives of the adult children, to explore the mechanisms through which childhood experience as a member of a CAF family influences later-life outcomes, including the potential for resilience(y), and to develop recommendations to inform policy and programming for contemporary military families.

**Methods:** Participants are adult children of CAF Veterans (n=30), aged 18 and over, representing diversities of experiences including age, geography, the rank of the Veteran, years of

Veteran's service, Veteran's deployments, element of service, and other relevant factors. Semi-structured interviews were conducted over secure video-sharing platforms, and transcribed verbatim, with open, axial, and selective coding facilitated through MAXQDA to produce common themes. All transcripts were cross-checked to ensure accuracy and procedures designed to enhance the rigour and soundness, or the trustworthiness, of the research were followed throughout the study.

**Results:** This study will demonstrate the long-lasting effects of the military lifestyle on the adult children of Canadian Armed Forces (CAF) Veterans. Employing semi-structured interviews as our primary research method, significant themes will emerge, offering invaluable insights into these experiences, notably the development of resilience(y). Our findings will encompass a wide range of diverse participants, revealing both common patterns and distinct variations in military upbringing experiences.

**Conclusions:** The adult children of CAF Veterans are an often overlooked population. However, their perspectives and insights are vital to understanding how children in military families develop and sustain resiliency across the life course. This study helps to exemplify the lived experiences of a diverse set of participants, highlighting potential implications for policy and programming.

### 3D04: "It has Made a Mark on the People we are as Adults": The Perceived Impact of Parental Military Service on the Adult Children of Veterans

*Gribble, Rachael, PhD<sup>1</sup>; Armour, Cherie, PhD<sup>2</sup>; Fear, Nicola, T., PhD<sup>1</sup>*

<sup>1</sup>King's College London (UK); <sup>2</sup>Queen's University (Belfast)

**Introduction:** Military families experience unique cultural and environmental factors that can impact the wellbeing of individuals. Whilst there are many studies examining the psychological impacts of military service on servicemembers and veterans, little research has explored the long-term impacts of growing up in a military family. This study aimed to address this gap by exploring the lived experiences of adults raised in military families through reflections of how their lives were impacted as children as well as how those influences are perceived to affect them as adults decades later.

**Methods:** Data comes from the UK Veterans Family Study (UKVFS), a mixed methods study of Armed Forces Veterans, their spouses/partners, and adult children. 34 adult children of Veterans (19 female, 15 male; n=10 from England, n=6 Scotland, n=10 Wales and n=8 Northern Ireland) took part in semi-structured interviews covering their experiences during and after Service, their experiences growing up in a military family, and perceived influences on their mental health and

well-being. Data was analysed using thematic analysis (Braun & Clarke 2006).

**Results:** Four initial themes have been identified from the data – these are to be finalised. *Family relationships* encompass interactions between and within families and perceived roles within the family including parentification and flexing roles. *Disruptions* identifies how relocation and deployment impacted friendships, school, and the concept of home, as well as how adult children internalised and made meaning of these experiences within their adult lives. *Military culture* describes how the normative constraints of the military environment, including military values, community, and learned behaviours, were seen to influence the behaviour and beliefs both during childhood and to this day. Finally, *health and wellbeing* explores support and help-seeking for parental mental health and their own needs, including internalised views towards help-seeking and perceived support in childhood, impacted adult children's mental health.

**Conclusions:** Initial findings have identified the unique perceived influences of the military lifestyle on the adult children of veterans throughout their lifecycles. The four themes identified highlight how family relationships, disruptions, military culture, and health and wellbeing intertwine and influence each other to impact how children from military families develop and learn to relate to others, and how this impacts their behaviours and relationships in adulthood. Findings further highlight the long-term influences of some of these experiences on health and well-being and pinpoint potential interventions within research, policy, and practice to support children and young people.

### 3D05: Rates of Outpatient Mental Health Service Use among Female Military Spouses: A matched retrospective cohort study

Chen, Hongyu, BSc<sup>1,2</sup>; Sutradhar, Rinku, PhD<sup>1,2</sup>; Cramm, Heidi, PhD<sup>3</sup>; Aiken, Alice, PhD<sup>4</sup>; Kurdyak, Paul, MD<sup>1,2,5</sup>; **Mahar, Alyson, PhD<sup>2,3</sup>**

<sup>1</sup>University of Toronto; <sup>2</sup>ICES; <sup>3</sup>Queen's University; <sup>4</sup>Dalhousie University; <sup>5</sup>Centre for Addiction and Mental Health

**Introduction:** In Canada, non-serving spouses of military members experience frequent geographic mobility and other military lifestyle dimensions that may cause a greater need for mental health services and barriers to their use, relative to civilians. Our team's previous work has documented less frequent use of mental health services for female military spouses in Ontario. In this study we update our team's previous investigation of mental health services use among civilian, female Canadian Armed Forces (CAF) spouses in Ontario with an additional decade of data and a more sophisticated approach to comparing rates of use.

**Methods:** This was a matched retrospective cohort study comparing female CAF spouses posted to Ontario between 01/01/2008 and 12/31/2019 with Ontario female civilians using administrative health data. CAF female spouses were hard-matched to civilians in Ontario 5:1 without replacement on age at index, sex, and geography. Participants were followed until 03/31/2023 or death. Outcomes included mental-health related emergency department (ED) visits, primary care visits, and psychiatrist visits. Estimated relative rates were adjusted for income quintile and index year using Andersen-Gill recurrent event regression models comparing female military spouses and female Ontarians. Effect modification by age, income, and region were investigated.

**Results:** The cohort included 6,183 female CAF spouses and 30,915 civilians. Crude mental health-related ED visit rates for female CAF spouses and matched female Ontarians were 16 and 22 per 1000 person-years (crude RR 0.80, 95% CI 0.65-0.98). Corresponding data for primary visits, and psychiatrist visits were 39 and 57 per 1000 person-years (crude RR 0.67, 95% CI 0.66-0.69), and 8 and 21 per 1,000 person-years (crude RR 0.39, 95% CI 0.37-0.41), respectively. After adjusting for confounders, the rates of mental health services use for CAF female military spouses were significantly lower relative to female civilians across all measures. We did not observe significant heterogeneity by age but did identify differences in the association by income and region of the province.

**Conclusions:** Information on how mental health services are accessed by civilian CAF spouses in the public health system can inform the planning and delivery of mental health services. Research is needed to understand why rates of mental health services use are lower, and whether they reflect unmet need among female spouses, differences in the epidemiology of common mental disorders between CAF spouses and the civilian population, or a greater use of federally funded mental health services or those paid for privately by employment health insurance.

### 6C02: Alcohol use and Eating Behaviours among Spouses and Partners of United Kingdom Military Personnel: A qualitative mixed-methods study

Palmer, Laura, PhD<sup>1</sup>; Whyte, Rachel, MSc<sup>1</sup>; Leightley, Daniel, PhD<sup>1</sup>; Fear, Nicola T., PhD<sup>1</sup>; **Gribble, Rachael, PhD<sup>1</sup>**

<sup>1</sup>King's College London (UK)

**Introduction:** Previous research has found spouses and partners of UK military personnel exhibit greater levels of hazardous alcohol consumption than their civilian counterparts. International literature shows that spouses/partners of military personnel's drinking is linked to mental health difficulties, separation from their partners due to deployment, and partners' combat deployments. Military stressors further appear to impact eating habits, with research suggesting that deployment can result in spouses/partners de-prioritising healthy



eating and using food for emotional regulation. This presentation shares findings from a completed qualitative mixed-method study exploring the lifestyle behaviours of the spouses/partners of UK military personnel and veterans.

**Methods:** This study collected online diaries over a 4-6 week period to capture the life events and lifestyle behaviours (including alcohol use, eating, exercising and socialising) of 72 spouses/partners of military personnel. A further N=21 were sampled for telephone interviews to investigate alcohol use and eating behaviours in more depth. Participants' ages ranged from 23 to 46 years old, all 21 identified as women and 20 participants met thresholds for hazardous drinking based on the consumption domain of the Alcohol Use Disorder Identification Tool (AUDIT-C). Participants' serving partners were Tri-Service (E.g. Royal Navy, Royal Marine, Army and Royal Air Force (RAF)) and held a range of ranks.

**Results:** The most common types of drinking within the sample included drinking to mark special occasions; socially-motivated weekend-drinking and drinking one-two drinks to negate feelings of stress. Alcohol use did not increase due to separation from serving partners but instead reduced due to the burdens of solo-parenting. Alcohol was not regarded as a prominent feature of participants' lives, however eating and exercise were cited as salient outlets for managing stress. In this presentation, we explore spouses/partners' perceptions of health, satisfaction, and control; the influences of military, family life and social factors and how different lifestyle behaviours intersect. Further, we reflect upon the use of multiple methods and their value in capturing the daily realities of military spouses/partners.

**Conclusions:** This study highlighted the various ways military structures impact the lifestyle behaviours of spouses/partners. Whilst the pressures of relocation and separation from partners due to deployment did not appear to increase alcohol use in our sample, these stressors impacted participants' eating behaviours. Our findings suggest that lifestyle behaviours may be improved through flexible and relatable supports that target multiple lifestyle domains, in addition to improving the general ecology of spouses/partners to promote feelings of autonomy.

## Poster Presentations

### **P101: Moving Beyond Knowledge Production: Getting evidence-informed psychoeducational resources into the hands of youth from Canadian Veteran Families**

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<sup>1</sup>Atlas Institute for Veterans and Families

**Brief Description:** The Atlas Institute for Veterans and Families recently launched an evidence-informed mental health education hub (MindKit) created for and with young Family members of Canadian Veterans. Research suggests that psychoeducational resources can improve mental health literacy, self-management and help-seeking, which in turn can improve well-being. Equally important to the production or creation of knowledge is disseminating it. Indeed, dissemination is a critical process for sharing information with those who need it, so it can be used and ultimately lead to positive changes.

The challenges of engaging with youth and disseminating youth-focused resources are well-documented. Youth from Canadian Veteran Families may be considered a hard to reach group, especially if they or their Veteran Family member are not connected to Veteran-specific supports or services; suggesting that specific strategies or approaches may be required. In light of these considerations, a multi-pronged, multi-level dissemination strategy was employed.

This presentation will outline the knowledge dissemination approach used for MindKit, including specific tools and strategies, and highlight insights related to reach and uptake. In addition, we will briefly outline plans for future dissemination efforts.

**Patient Population:** The target audience for MindKit is youth from Veteran Families between the ages of 13 to 29. This presentation may be of interest to researchers, government staff, and service providers who are interested in learning about the process of knowledge mobilization, particularly practical dissemination approaches, tools and strategies.

**Results:** Since MindKit's launch in June 2023, over 500 copies of printed materials have been distributed across Canada and the website has received over 100,000 page views.

In consultation with youth advisors, Family members and communications specialists, we compiled a list of stakeholders across multiple levels to identify key people and organizations who could influence access to resources among youth. These included community champions and influential figures, governmental departments, non-profits, and service providers. Various dissemination strategies were used including direct outreach, community presentations, development and distribution of program materials, ambassadors and community champions, social media, and paid advertising.

Over the next year, the project will enter a second phase, expanding the original stakeholder map to other groups, specifically educators, parents and caregivers. Planned dissemination strategies could include the development of a toolkit or other guidance materials.

**Conclusions:** A variety of strategies can be used to share knowledge widely and get it into the hands of the Veteran community. A multi-pronged, multi-level dissemination approach may be especially useful for maximizing reach and uptake for youth.

### **P105: Peer-to-peer Bullying among Children and Youth from Military Families: A systematic review.**

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<sup>1</sup>King's College London (UK); <sup>2</sup>Queen's University

**Introduction:** Peer-to-peer bullying for children and youth in civilian populations is well studied including associated risk factors and outcomes of bullying. However, little is known about bullying among children and youth from military families, and whether findings from civilian literature are comparable to military families. Children and youth from military families have unique experiences which may impact their peer-to-peer bullying experiences, such as increased frequency of movement between schools as the result of military relocations, creating instability in peer relationships. We aim to provide an up-to-date review of literature that examines the interaction between peer-to-peer bullying among children and youth from military-connected families including risk and protective factors for bullying, common types of peer-to-peer bullying and the role children from military-connected families take in peer-to-peer bullying (i.e., victim, bystander, or perpetrator).

**Methods:** The systematic review will apply the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (PRISMA). Full literature searches will be conducted in databases including but not limited to PsycINFO, PubMed, MEDLINE, Web of Science, ASSIA, EMBASE, and Scopus. The review will include qualitative and quantitative studies from the perspective of the children and youth with a parent or caregiver serving or who previously served in the military, their parent(s) or caregiver(s) and teachers. There will be no time-period restrictions for articles. At least two reviewers will assess titles/abstracts and the full text of eligible citations. Information such as study methods, location, population, bullying type, bullying role, and bullying outcomes will be summarized. Meta-analyses of risk and protective factors, as well as comparisons with the general population, will be completed where possible.

**Results:** We identified 2,585 articles from the database search with duplicates excluded (n=170). Screening is ongoing.

**Conclusions:** This review will provide a comprehensive summary of studies that have reported on peer-to-peer bullying for children and youth from military-connected families and direct future research in this population. Understanding the role that belonging to a military family may have on peer-to-

peer bullying could assist detection of children and youth from military families at risk of bullying or being perpetrators of bullying and contribute to developing preventive measures to limit negative outcomes from bullying. These findings may contribute to developing and implementing programmes supporting youth in military families to maintain healthy relationships across their family's military career.

### **P106: Exploring the Impact of Military Sexual Trauma on the Romantic Partners of Canadian Armed Forces Veterans: A Study Protocol**

*Maunder, Larah, PhD<sup>1</sup>; Lopes, Jillian, MA<sup>1</sup>; Ibbotson, Ashley, MA<sup>1</sup>; Held, Nicholas, PhD<sup>1</sup>; Orchard Young, Shannon, MSc<sup>1</sup>; McKinnon, Margaret, PhD<sup>1,2,3</sup>*

<sup>1</sup>McMaster University; <sup>2</sup>St. Joseph's Healthcare Hamilton; <sup>3</sup>Homewood Research Institute

**Introduction:** Past research with civilians has demonstrated the burden that sexual misconduct (SM) has not only on survivors, but also on their romantic partners, who are often survivors' primary support providers after SM. Romantic partners have reported the toll that supporting survivors takes on them, and how this strains their relationship. For survivors, partner responses to their disclosure of sexual assault deeply affect their relationships, as substantial numbers of survivors report that their relationship dissolved after they disclosed their assault to their partner. To date, no work has explored the impact of SM on the romantic partners of Canadian Armed Forces (CAF) Veterans, who may have very different experiences than partners of civilians. This points to a crucial need to i) understand the impact of SM on the romantic partners of CAF Veterans who experienced SM, ii) identify the supports that romantic partners require, and iii) explore how the support that partners provide affects Veterans' recoveries.

**Methods:** We will conduct individual interviews via telephone or videoconferencing with 20 romantic partners of CAF Veterans who experienced SM. Interviewers will inquire about the experience of being a romantic partner of an SM survivor, the impact of the affected partner's sexual trauma on participants, and supports participants received or provided. Interviews will be audio recorded, transcribed, and analysed qualitatively using reflexive thematic analysis.

**Results:** Results will detail the unique experiences of romantic partners of Veterans with sexual trauma, and how these experiences impact partner and survivor well-being. The study will suggest recommendations for supporting partners and how partners can best support survivors, which can be used by individuals and organisations who support SM survivors and their partners.

**Conclusions:** This project will enhance understanding of the impact of SM on romantic partners and their well-being. Questions in our study will ask partners to reflect on the

supports they utilised or desired after their partners' disclosures of sexual assault, to produce insights into the supports (e.g., emotional, informational) that romantic partners most need. By inquiring how partners supported survivors, we will identify how partners influence survivors' recoveries. This identification will reveal whether resources (e.g., education about sexual assault for partners) should be directed towards romantic partnerships to help survivors recover. Additionally, our recommendations will provide direction to clinicians and policymakers who aim to assist survivors and their families, which may lead to the improved well-being of CAF Veterans and their partners.

### **P107: Serving Families of those who Serve: An exploration of psychosocial support following a tragedy (Study in Progress)**

*Richardson, Melissa<sup>1</sup>; Black, Tim, PhD<sup>2</sup>; de Wit, Kerstin, MD<sup>1</sup>; Cramm, Heidi, PhD<sup>1</sup>*

<sup>1</sup>Queen's University; <sup>2</sup>Wounded Warriors Canada

**Introduction:** When a distressing and tragic event occurs in the defence or public safety (DPS) community, the impacts ripple beyond those most directly involved, and out into families of those who serve across wider occupational communities. As geopolitical turbulence increases worldwide, the rate at which disasters or tragedies, including on-duty shooting deaths, training incidents, and wildfires occurs has also increased, resulting in heightened occupational risk of death, illness or injury of serving personnel. Though DPS organizations may provide psychosocial support for serving personnel when these incidents occur, family members are often left to manage the consequences of such events on their own. As disasters occur more frequently, it becomes increasingly more important to ensure that DPS families have psychosocial support following these incidents. A critical first step in developing culturally competent psychosocial support for DPS families is to gain insight into their current psychosocial experience, including their experience of support, following these tragedies. In response to this, this interpretative phenomenological analysis (IPA) aims to explore the psychosocial experience of DPS families following a tragedy within their occupational communities.

**Methods:** DPS family members are being recruited through purposive sampling, and data are being collected through individual semi-structured interviews. Family members differ in their relationships to DPS personnel, as well as in how direct their exposure to a distressing and tragic event are. IPA is being used to build rich, thick narratives of the lived experiences of family members who have experienced a tragedy within their occupational communities. Following Smith's IPA methodology, each interview will be analyzed individually to develop personal experiential themes, which will then be clustered into group experiential themes across study participants

to gain insight into the essence of the psychosocial experience of DPS families.

**Results:** Results will provide insight into the essence of the psychosocial experience of DPS families. Expected themes surround the impacts of membership to defence and public safety communities, current means of support, and recommendations for needed psychosocial support after tragedies.

**Conclusions:** DPS families are greatly impacted by occupational risks associated with defence and public work. Tragedies in the occupational community can ripple well beyond those most directly impacted. The lived experience of DPS families following tragedies will provide preliminary findings to help develop culturally competent psychosocial support recommendations to aid DPS organizations in providing needed support for families, while also providing a foundation for future research and program development.

### **P108: Supporting Families through Military and Veteran Sports Competitions**

*Roberts, Lauren, MSc<sup>1</sup>; Shirazipour, Celina, PhD<sup>2,3</sup>; Latimer-Cheung, Amy, PhD<sup>1</sup>; Norris, Deborah, PhD<sup>4</sup>; Cramm, Heidi, PhD<sup>1</sup>*

<sup>1</sup>Queen's University; <sup>2</sup>Cedars-Sinai Cancer Research Center for Health Equity; <sup>3</sup>University of California Los Angeles; <sup>4</sup>Mount Saint Vincent University

**Introduction:** Increasingly, sport has been employed as a rehabilitation and recovery tool for injured military members and Veterans. Research has shown that participating in adaptive sport can lead to improvements in physical, mental, and social health. Families of the competitors are a key motivator and facilitator of participation in adaptive sport. Research regarding sporting families, from both a general and adaptive sport perspective, has noted that the non-competing family play an important role in facilitating participation, but often at a personal cost. Some adaptive sport competitions are increasingly recognizing the importance of including family and acknowledging the role of family, including military and Veteran oriented competitions. This study aims to identify and describe the evidence for family supports to ensure quality participation for the families.

**Methods:** To understand how families are currently considered related to adaptive sport and related programs, a review of current literature is needed. The question "How are families considered in adult adaptive sport" will guide the mapping of the existing literature through a scoping review implemented in accordance with Arksey and O'Malley's framework. Initial searching returned limited research concerning families within a military and Veteran sport context, necessitating a broadening of inclusion to all adult adaptive sport to ensure families are captured. Terms related to family, adaptive sport, and family inclusion will be combined and tailored to five databases, sportDISCUS, PubMed, CINAHL, Medline, and PsycInfo, with an

additional Google Scholar search. Data will be extracted and then analyzed according to Ritchie and Spencer's framework analysis. In accordance with Arksey and O'Malley's framework, we will also be conducting consultation interviews with organizers of the existing family programs for feedback and further information which may enhance our understanding of the existing literature and provide additional context.

**Expected Results:** Results are expected to identify key elements of family participation in adult adaptive sport.

**Conclusion:** This scoping review is an essential starting point in building evidence to inform family programs. This review is expected to provide a framework and infrastructure for additional research and future program and policy development for families in military and Veteran adaptive sport.

### **P109: The Grief Experiences of Military and Veteran Family Members, 2001-2024: An exploration in progress**

*Vaters, Lisa, DSc (Cand)<sup>1</sup>; Lamrock, Laryssa<sup>2</sup>; Nuttman-Shwartz, Orit, PhD<sup>3</sup>; Cramm, Heidi, PhD<sup>1</sup>*

<sup>1</sup>Queen's University; <sup>2</sup>Atlas Institute for Veterans and Families; <sup>3</sup>Sapir College

**Introduction:** Military and Veteran family members can be faced with the death of their family member. Canadian Armed Forces member's and Veterans' lives can include training accidents, deployments, suicide, combat, and combat trauma exposure. The way their loved one died can compound their grief and put family members at risk for prolonged grief that can negatively impact their mental health and well-being. There is a lack of qualitative research on the grief experiences of Canadian military and Veteran family members and how their grief process may differ from civilian family member experiences.

Service providers who support family members may not understand their bereavement process and their unique considerations for effective service provision. This qualitative study, for the first time since Afghanistan, aims to explore and understand the grief experiences of military and Veteran family members whose loved ones have died since Afghanistan and to examine the support provided to them.

**Methods:** Data will be collected until Fall 2024 using individual semi-structured interviews of family members' accounts of living with grief and bereavement will involve deeply exploring their lived experiences, how they make sense of their grief experiences, and the meanings they derive from them. Interviews will be analyzed using Smith's interpretative phenomenological analysis, with analysis aimed to be completed by late 2024.

**Expected Results:** The unique nature of military and Veteran family grief can be traumatic. Though findings may change as the study progresses, expected themes will be derived from understanding the family members' experiences, such as relocation, disrupted family relationships, loss of identity, loss of support networks, and the supports they used.

An in-depth focus on the participants' perspectives will illuminate the voices of military and Veteran family members and will provide the foundation for military and Veteran grief research to grow in Canada. Findings will have potential implications for future bereaved family members and service providers caring for and treating these family members.

**Conclusion:** Canadian Armed Forces members can die due to their line of work, during or after service. If their loved ones die, those who support their loved ones in and out of uniform can experience grief, which can negatively impact their mental health and well-being. This study will begin to fill a gap within the literature that will inform the military and Veteran family community and the service providers who support that community.

## **MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING**

### **Podium Presentations**

#### **1E04: You Wear It Well: Preliminary Analysis of Biometric Data Collected During a Psychoeducation and Support Program for Spouses of First Responders**

*Schwartz, Kelly, PhD<sup>1</sup>; Duffy, Hanna, PhD<sup>1</sup>; Harris, Daranne, MA<sup>1</sup>*

<sup>1</sup>University of Calgary

**Introduction:** First responders (FR), including police, fire, and paramedics, face an increased risk of mental disorders due to their frequent exposure to potentially traumatic events (i.e., operational stressors; Carleton et al., 2018). The impact of these stressors extends to FR families, with spouses often bearing the brunt of supporting the FR member and the family (Casas & Benuto, 2021). Addressing the effects of operational stress on family members, a 6-week psychoeducation and support program called Re: Building Families was delivered to spouses and partners of police, fire, and paramedic members that explored operational culture, communication, support, and identity.

**Methods:** In addition to questionnaires measuring social, psychological, and family functioning completed pre, post, and at 3-months following the 6-week program, all participants were invited to voluntarily wear a Garmin (Venu SQ) for 20 weeks. Partnering with Labfront technologies, continuous data streaming collected heart rate (3 min), stress (3 min), steps (1 min), respiration (1 min), sleep (hours/mins), and heart rate interval (BBI/RR) from both spouse/partners (N = 142) who participated in the Re:Building Families program and the first



responder member (N = 109). Representing police, fire, and paramedic service areas from BC, AB, SK, and ON, participants were also prompted with diaries that asked them to briefly report daily experiences that may have elevated stress, interrupted sleep, or altered physical activity.

**Results:** With the anticipated final data collection date in July, 2024, pairwise latent growth curve analysis will explore if and where there were identifiable changes in biometric functioning for both the spouse/partner and the first responder (who did not participate in the Re: Building Families program). Tempered expectations are that there may be noted improvements in physical activity, quality of sleep, lowered stress, and regulation of heart-rate variability as a result of participation in the Re: Building Families program. Biometric data will be analyzed both at the individual levels and as paired-samples (i.e., spouse/partner and their first responder member) to assess for collaborated change.

**Conclusions:** Family members (i.e., spouses/partners) of first responders deserve access to evidence-based programming designed to improve mental health and relational well-being. For spouses and partners who participated in the Re: Building Families program, biometric wearables represent a novel method of estimating positive changes in important physical markers of well-being. How this individual change for spouses may also be reflected in similar, though likely muted, changes in the first responder represents an innovative advancement of measurement methodology for future research.

### 7C03: Understanding the Transition of Older adult Veterans into Long-term Care: Perceptions of family care partners

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<sup>1</sup>University of Ottawa; <sup>2</sup>Brock University; <sup>3</sup>Perley Health

**Introduction:** Family care partners of Veterans represent a unique demographic, as the Veterans they care for can have specific needs that might differ from the general population. The transition to a long-term care home has the potential to profoundly impact older adult Veterans and their family care partners, however, there is no research on how this move affects them specifically. Understanding this, often final, transition will allow for the improvement of care and support throughout this process, for both family care partners and Veterans. The objective of this study was to explore perceptions related to the experiences and needs of family care partners of older adult Veterans transitioning from the community to a long-term care home.

**Methods:** A qualitative descriptive design guided this study. Purposive sampling was used to recruit participants who care for a Veteran in a long-term care home with contract beds specifically for Veterans and homes without. One-time

semi structured interviews were conducted with family care partners of older adult Veterans (n=9) living in long-term care homes across Canada. Coding and thematic analysis were used to iteratively categorize and synthesize the data using a constant comparative approach.

**Results:** From our analysis, four themes emerged: 1) knowledge and use of resources, 2) communication throughout the process, 3) the health and well-being of the Veteran/family care partner, and 4) feeling recognized and supported. These themes influenced the overall experience of the move to a long-term care home for Veterans and their family care partners and either served to impede or facilitate a positive transition.

**Conclusions:** The results of this study will contribute to the creation of tailored programs and policies that better address the needs of family care partners and ultimately the Veterans they care for throughout the transition into a long-term care home. This interdisciplinary project includes collaborations with Veteran, care partner, and long-term care organizations, persons with lived and living experiences, and researchers from various disciplines, building capacity in Veteran-related research and highlighting the importance of supporting Veterans and their family care partners as they move into long-term care.

## Poster Presentations

### P102: Supporting the Wellbeing of Participants and Families as they Transition from the Invictus Pathways Program

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<sup>1</sup>University of South Australia

**Introduction:** Veterans and First Responders may have long-term physical and mental health issues due to their service. Their families often take on carer roles, which can impact their physical and mental wellbeing. UniSA's WAVES program is a holistic program supporting the wellbeing of Veterans, First Responders, and their families. A component of WAVES, the Invictus Pathways Program (IPP) supports Veterans and First Responders to improve their wellbeing and community reintegration, through one-on-one student-delivered exercise. Upon completion of the student-delivered exercise component, participants can lose access to the IPP's services and social networks, potentially negatively impacting their wellbeing. As such, there is a need to bridge the gap of transition support and community reintegration, whilst including families in this process and more broadly within WAVES. The study comprises three phases; data collection and analysis are complete for phases one and two, data collection is underway for phase three. The study aims to: identify the wellbeing status and support needs of IPP participants and their families during

transition and; identify the supports required by families to enable them to support themselves and their Veteran or First Responder.

**Methods:** This study used a pragmatic, mixed methods approach. IPP Veterans, First Responders, and their families were recruited via email for involvement in three phases of data collection. Phase one involved a baseline survey with objective physical and psychological wellbeing measures and open-ended questions on transition experiences; phase two involved focus groups and interviews for deeper insights. Phase three was a 12-month follow-up to the initial survey. Reflexive thematic analysis was employed for qualitative analysis. Phase one quantitative data were analysed using means, standard deviations, and percentages. Comparisons between phase one and phase three data will be conducted once collection of the latter is complete.

**Results:** Preliminary results suggest that participants access a variety of supports offered by IPP during transition including: building fitness knowledge and progress, psychological benefits, and social connections. Participants identified gaps in support and barriers to successful transition including a lack of information on external resources, the absence of post-transition check-ins, loss of motivation post-transition, and geographical barriers.

**Conclusions:** Preliminary results suggest that whilst current transition supports offered by the IPP are effective for some, there are gaps in support and barriers to transition. Results from this study will guide the refinement of a transition pathway through the IPP that better addresses the wellbeing, support, and community reintegration needs of IPP participants and their families.

### **P103: Environmental Scan and Rapid Review of Mental Health and Wellbeing Programs for Veteran Family Members**

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<sup>1</sup>MacDonald Franklin Operational Stress Injury Research Centre; <sup>2</sup>Western University

**Introduction:** The military-to-civilian transition often introduces new challenges to the Veteran and their family unit. A common barrier to seeking formal support during this phase is a lack of resources or knowledge of available support, and to our knowledge, a comprehensive list of supports available to Canadian Veteran Families does not currently exist. The current study seeks to address this barrier by conducting an environmental scan of programs, services, and supports available to Canadian Veteran Families, and by conducting a rapid literature review identifying successful supports for Veteran Families. This research aims to increase awareness of programs

available to Canadian Veteran Families, while also identifying opportunities to improve the landscape of these programs in Canada.

**Methods:** Multiple scanning methods were used to gather information for the environmental scan, including web searches to identify publicly available resources offered at the governmental, organizational, and community levels. Stakeholders were also canvassed to acquire non-readily available information. The rapid literature review was conducted using Cochrane's guidelines as a methodological framework (Higgins, 2022) and followed the Preferred Reporting Items for Systematic Review and Meta-Analysis - Rapid Review (PRISMA-RR) guidelines for standards of reporting findings (Stevens et al., 2018).

**Results:** From the environmental scan, 104 programs for Veteran Families across Canada were identified, most of which provide financial, psychoeducational, and informational support. Of the programs, most have not been evaluated for effectiveness. From the rapid review, 40 articles were included in the systematic review. Of the included articles, none were Canadian. Of the programs examined, psychoeducation, psychotherapy, or alternative treatments were the most common. Five effectiveness indicators were identified: mental health and wellbeing, social functioning, program satisfaction, physical and health behaviours, and quality assurance.

**Conclusions:** This project provided a landscape capture of the diversity and availability of programs available to Canadian Veteran Families. Of these, many have not been examined empirically. Several gaps were identified in our study when combining our review of the programs and evidence in the literature. Namely, the most common programs available in Canada were not the same types of programs that were evaluated empirically according to our systematic review; this may highlight a disconnect between the needs identified in academia versus the community.

### **P104: Veteran and Military Families: A Scoping Review**

*MacLean, Mary Beth, PhD<sup>1</sup>; Hall, Amy, PhD<sup>2</sup>*

<sup>1</sup>Sunnybrook Health Sciences Centre and Politikos Research; <sup>2</sup>Veterans Affairs Canada

**Introduction:** What is known about military and Veteran families has not been systematically identified. Therefore, the objectives of this review were to (1) examine the well-being of military/Veteran families including intersectionality; (2) identify evidence-based intervention; and (3) identify gaps in support and research.

**Methods:** Two literature reviews were conducted: one on Veteran families in Canada and internationally, and another on military families in Canada. For each review, the peer-reviewed

literature was searched across five databases and two journals for articles published from 2013 to 2023 using PRISMA guidelines and a Population Exposure Outcome framework.

**Results:** Over the last decade, 230 articles were published on Veteran families (mainly from the United States) and 67 on military families in Canada, 45 and 28, respectively, of which were included in this study. Seven topics were identified in the Veteran family literature. The most common was the impacts of programs on family and Veteran well-being followed by the impacts of Veteran health/health disability, impacts of military service/ transition to civilian life, access to resources such as support for caregivers, and navigating the transition to civilian life, homelessness predictors and experiences, risk and protective factors, and healthcare provider cultural competency.

Seven topics were also identified among the military families in Canadian literature. The most common was the impacts of military service, followed by access to resources, risk and protective factors, impacts of programs, impacts of Veteran mental health, and healthcare provider cultural competency.

**Conclusions:** Evidence suggests that military service in general, transition to civilian life, and military member/Veteran health negatively impact the well-being of families - generally defined as the traditional, heteronormative family. Risk and protective factors and barriers to accessing support were also identified. Research gaps include the effectiveness of interventions that address the broad psychosocial needs of families, and intersectional analysis.

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## HEALTH SERVICES

### Poster Presentations

#### P129: Exploring the Crisis Line Needs of Public Safety Personnel: Results from a national survey

**Castillo, Gisell, MA<sup>1</sup>**; *Clarkin, Chantalle, PhD<sup>1,2</sup>*; *Rajaratnam, Thiyake, MSc<sup>1</sup>*; *Ahmad, Fatima, BA<sup>1</sup>*; *Crawford, Allison, MD, PhD<sup>1,2</sup>*

<sup>1</sup>Centre for Addiction and Mental Health; <sup>2</sup>University of Toronto

**Introduction:** Public Safety Personnel (PSP) are a priority group for suicide prevention initiatives given that they face repeated occupational exposures to traumatic events, elevated rates of mental health distress, and increased risk of suicidal thoughts and behaviours. Crisis lines are an evidence-based intervention and integral part of the Canadian Federal Framework for suicide prevention. However, questions regarding barriers and facilitators to accessing crisis line services, service preferences, and crisis line intervention needs remain largely unexplored among PSP. This study sought to address this knowledge gap by conducting a national online survey.

**Methods:** We surveyed PSP (including in service, in training, and retired) across Canada to explore crisis line needs. Recruitment strategies involved ongoing outreach with PSP-serving organizations via email, social media, and event attendance. Survey questions sought to document PSP demographics, service preferences, and barriers and enablers derived from the Theoretical Domains Framework. Regression analyses will be conducted to identify the determinants of intent to use crisis line services.

**Results:** Recruitment for this survey is ongoing; we aim to present updated survey results at the CIMVHR conference. Preliminary survey data (April 2024, N = 575) indicated that Ontario, British Columbia and Saskatchewan were the most represented provinces while the territories (NT, NWT, YK) were the least represented. Respondents included paramedics, law enforcement, firefighters, and search and rescue personnel. Survey respondents were largely frontline, in service, and from medium to large urban centres. More than half of respondents were woman-identified.

Half of respondents reported experiencing suicidal ideation or behaviours since becoming a first responder. While only a few reported accessing helplines or crisis lines in the past, some indicated they would access a crisis line in a time of need. Almost all respondents reported that speaking with crisis line responders who are familiar with first responder mental health needs and the nature of first responder work would be important or very important while fewer respondents rated peer support as important or very important.

**Conclusions:** Preliminary survey findings suggest that PSP crisis line preferences can be addressed through training and practice changes. A more nuanced understanding of the intricate interplay between barriers, enablers, demographic trends, and service preferences will provide insights to further inform the co-design of customized tools, resources, and recommendations to support those who may wish to access crisis lines. This, in turn, bolsters the support infrastructure available to PSP when accessing suicide prevention services.

## PRIMARILY MENTAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1E01: Peer Support in Public Safety Workplaces: How does technology affect outreach?

**Moll, Sandra, PhD<sup>1</sup>**; *Carleton, R Nicholas, PhD<sup>2</sup>*; *Czarnuch, Stephen, PhD<sup>3</sup>*; *MacDermid, Joy, PhD<sup>4</sup>*; *MacPhee, Renee, PhD<sup>5</sup>*; *Ricciardelli, Rose, PhD<sup>3</sup>*

<sup>1</sup>McMaster University; <sup>2</sup>University of Regina; <sup>3</sup>Memorial University; <sup>4</sup>Western University; <sup>5</sup>Wilfred Laurier University

**Introduction:** Peer support can be a trusted resource to manage the ongoing pressures of public safety work, however barriers to accessing support include limited awareness of when and how to reach out, timely access to relevant services, and concerns about privacy. App-based technology has the potential to increase access and reduce barriers to reaching out, however, little is known about how it might be adopted given the current tradition of in-person peer support. The purpose of this research was to track the implementation and outcomes of PeerOnCall, a new mobile health peer support app designed by and for Canadian Public Safety personnel.

**Methods:** A multi-site mixed methods implementation trial of PeerOnCall, an app-based peer support platform, was conducted over a three to six-month period in 37 public safety organizations across Canada. This included organizations in emergency communications, corrections, fire, paramedic, and police sectors. Software analytics were used to track patterns of outreach to peer support across sectors and organizations. Baseline (n=48) and follow-up (n=34) interviews were conducted with organizational champions, and follow-up focus groups were held with peer support providers in order to explore facilitators and barriers to accessing app-based peer support. Analysis was informed by the Consolidated Framework for Implementation Research.

**Results:** Of the 934 app users, approximately 18% (n=168) reached out for text-based peer support, with considerable variation by organization and sector. Reported benefits included the increased profile and accessibility of peer support providers, the private, secure connection to peer support, and the opportunity for evaluation. There were tensions, however, regarding 'anonymity', particularly in small organizations, how

to integrate technology into the traditional model of in-person support, how to ensure sustained engagement, and integrate proactive outreach.

**Conclusions:** Mobile health technology has the potential to transform how public safety personnel reach out for peer support. Despite many potential benefits, it will take time to identify and address barriers to moving beyond traditional models, and understand ‘what type of peer support works for whom in what context’. Future implementation science research is needed to support advancement in the field.

## 1E02: App-based Peer Support: Implementation of PeerOnCall in the Fire Service

*MacDermid, Joy, PhD<sup>1</sup>; Campbell Bromhead, Robin, PhD<sup>1</sup>; Ricciardelli, Rose, PhD<sup>2</sup>; Czarnuch, Stephen, PhD<sup>2</sup>; MacPhee, Renee, PhD<sup>3</sup>; Carleton, Nicholas, PhD<sup>4</sup>; Moll, Sandra, PhD<sup>5</sup>; Stretton, Sara, PhD(Cand)<sup>1</sup>*

<sup>1</sup>University of Western Ontario; <sup>2</sup>Memorial University; <sup>3</sup>Wilfred Laurier University; <sup>4</sup>University of Regina; <sup>5</sup>McMaster University

**Introduction:** Firefighters and public safety personnel (PSP) are frequently exposed to potentially psychologically traumatic events as a function of their job requirements; where such exposures have been widely linked to mental health injuries. PSP have reported difficulties in accessing mental health resources and supports due to various reasons including stigma and lack of accessibility and cultural competency. Peer support may be an important resource for first responders as it is readily accessible, culturally competent, and works toward reducing stigma within their environment. As such, an anonymous peer support app, PeerOnCall, was designed for PSP and implemented to explore how a mobile health peer support platform is used within the fire service.

**Methods:** Using a prospective cohort design, we recruited 14 Canadian fire organizations to participate in the PeerOnCall implementation study. These organizations were from three provinces across Canada: Alberta (n=1, Newfoundland (n=4), and Ontario (n=9) and included a total of 2,069 employees and 116 peer supporters. The implementation duration was 3 or 6 months. Semi-structured interviews were conducted at three timepoints: 0 months, 3 months, and 6 months. The interviews explored perceived benefits, challenges, facilitators, and barriers to implementation. Data was analyzed using thematic analysis.

**Results:** Preliminary results: Across the three timepoints, several major themes emerged: organizational culture barriers to seeking support, novel benefits of PeerOnCall, and “changes take time”. The largest barriers to seeking/utilizing peer support were said to be due to culture within the fire service including stigma, concerns about confidentiality, and slow/resistant nature of adopting change. Participants noted several

novel benefits: anonymity, “a one stop-shop” for support and resources, increased accessibility, and the creation of another “tool in the toolbox.” As implementation duration increased, the theme “it takes time” emerged: participants reflected that talking about mental health is “new” and it will take time to de-stigmatize peer support and build trust within and utilize PeerOnCall.

**Conclusions:** Peer support and mobile health peer support are new concepts and such changes take time to build trust and adopt within the service. However, PeerOnCall was still viewed as beneficial as it offered novel benefits and created another resource available to members. The study results reflect challenges of time constraints of a funded study in understanding whether an app would be useful and how it fits into an overall mental health strategy in the long term.

## 2B03: Digital Interventions to Enhance Urban and Remote Mental Health

*Bhat, Venkat, MD<sup>1</sup>*

<sup>1</sup>University of Toronto

**Introduction:** The integration of Measurement-Based Care (MBC) with digital health technologies, including virtual reality (VR), mobile applications, and wearable devices, presents an opportunity to enhance mental health services in urban and remote settings. Despite the potential of MBC to facilitate improved patient engagement and tailored interventions, its adoption is often limited by clinician hesitancy and structural barriers. Digital health technologies aim to address these limitations by improving the accessibility and efficiency of mental health care.

**Methods:** This presentation reviews findings from three distinct studies. The first study investigates the adoption and integration of a digital suite, comprising VR, apps, and wearables, within urban clinical settings. The second study assesses the impact of this digital suite on supporting healthcare providers’ decision-making and stress levels. The third project, which is just commencing, aims to apply this digital suite in remote Indigenous communities in Labrador to enhance service delivery through early detection and continuous monitoring.

**Expected Results:** The first study concluded that while the digital suite shows promise, integration into existing clinical workflows presents significant challenges. Adoption rates varied, influenced by the digital literacy of staff and institutional support. The second study found that the suite significantly aided healthcare providers by improving decision-making capabilities and reducing stress, indicating its potential as a supportive tool in healthcare settings. The third study in Labrador has initiated, with goals to tailor digital interventions to the unique needs of remote mental health care.

**Conclusions:** The adoption of MBC enhanced by digital interventions highlights both the potential benefits and the existing hurdles in modern mental health practices. Successful implementation in urban clinical settings and among healthcare providers suggests that these technologies can be effective in improving mental health services. However, the adaptation of these interventions to different environments, particularly in remote areas, remains a challenge. As the Labrador project progresses, it will provide further insights into the scalability and adaptability of digital health technologies across diverse settings. Continued development and strategic implementation are essential to ensure these technologies meet the varied needs of all populations (including sex and gender equity), aligning with evidence-based practices to optimize mental health outcomes.

## 2E01: Mental Health Disorder Symptoms among Royal Canadian Mounted Police

*Shields, Robyn E., MSc<sup>1</sup>; Andrews, Katie L., PhD<sup>1</sup>; Nisbet, Jolan, PhD<sup>1</sup>; Maguire, Kirby, BA<sup>1</sup>; Jamshidi, Laleh, PhD<sup>2</sup>; Madden, Steve<sup>3</sup>; Carleton, R. Nicholas, PhD<sup>1</sup>*

<sup>1</sup>University of Regina; <sup>2</sup>University of Wisconsin-Milwaukee (USA); <sup>3</sup>National Police Federation

**Introduction:** The Royal Canadian Mounted Police (RCMP) experience extraordinary exposures to diverse occupational stressors, potentially exacerbated by systemic stressors (e.g., public calls for pervasive organizational changes, the COVID-19 pandemic, natural disasters). Data collected in 2017 (Carleton et al., 2018) evidenced 50.2% of RCMP officers screened positively for one or more posttraumatic stress injuries (PTSI), including posttraumatic stress disorder (PTSD; 30.0%) and major depressive disorder (MDD; 31.7%). The Federal Framework on PTSD emphasized a) improving PTSI prevalence tracking; b) promoting PTSI guidelines and best practices; and c) increasing PTSI awareness and enhancing diagnoses, treatments, and management. The Framework prioritized PTSI prevalence tracking; accordingly, the current study was designed to provide 1) updated estimates for mental health symptoms and positive screens for mental disorders among RCMP members; 2) comparisons with previous mental health estimates for RCMP, other public safety personnel, and the general population; and 3) evaluations of differences in symptoms across sociodemographic categories among RCMP members.

**Methods:** RCMP ( $n=1348$ ) completed an online survey available from June 2022 to February 2023. The survey was collaboratively designed by the research team and the National Police Federation to focus on relevant policing variables. Online surveys assessed symptoms of alcohol use disorder, generalized anxiety disorder, MDD, panic disorder, PTSD, social anxiety disorder, and cannabis use disorder. Prevalence of positive screens were calculated, and comparisons were examined across sociodemographic characteristics, and compared to 2018 data.

**Results:** The positive screening prevalence for any mental health disorder was higher ( $ps<.05$ ) for current participants (64.7%) than previously reported for RCMP members (50.2%), diverse public safety personnel (44.5%), and the general population diagnostic prevalence (10.1%). Women were less likely ( $ps<.05$ ) to screen positive for PTSD and alcohol use disorder than men participants.

**Conclusions:** The current study provides updated estimates about the mental health of RCMP. Interactions between socio-demographic variables and mental health were also clarified. RCMP participants evidenced substantially more mental health challenges than previous assessments and compared to other PSP occupations and the general population. The results underscore urgent and growing needs for proactive and ongoing evidence-based supports for RCMP mental health, at the individual, organizational, and structural levels.

## 2E02: Potentially Psychologically Traumatic Events and Occupational Stressors Among Royal Canadian Mounted Police

*Andrews, Katie L., PhD<sup>1</sup>; Jamshidi, Laleh, PhD<sup>1</sup>; Shields, Robyn E., MSc<sup>1</sup>; Nisbet, Jolan, PhD<sup>1</sup>; Maguire, Kirby Q., BA<sup>1</sup>; Madden, Steve<sup>2</sup>; Carleton, R. Nicholas, PhD<sup>1</sup>*

<sup>1</sup>Canadian Institute for Public Safety Research and Treatment; <sup>2</sup>National Police Federation

**Introduction:** Royal Canadian Mounted Police (RCMP) experience diverse occupational stressors (i.e., organizational and operational), including potentially psychologically traumatic events (PPTs), that can negatively impact mental health. The current study provides results describing the prevalence of PPTs, organizational stressors (e.g., staff shortages), and operational (e.g., shift work) stressors among RCMP in 2023 relative to 2017. The study also examined independent and unique associations between different PPTs, other occupational stressors, and RCMP mental health.

**Methods:** RCMP participants ( $n=1348$ ; 75.0%) self-reported experiences of occupational stressors, including PPTs, and mental health disorder symptoms using an online survey collaboratively designed by the research team and the National Police Federation. Independent samples  $t$ -tests and analysis of variance tests (ANOVAs) were used to compare the prevalence of PPTs and other occupational stressors across sociodemographic categories and to previously published samples of RCMP. Multivariate logistic regression models assessed for associations between positive screens of mental disorders and 1) PPTs and other occupational stressors; 2) independent and interactive effects of mean organizational and operational stress scores; and 3) the total number of PPTs exposures and positive mental disorder screens.

**Results:** Participants reported exposure to more different types of PPTs in 2023 (~13) than in 2017 (~11). Exposure

frequencies for all PPTe types were statistically significantly higher for the current sample than in 2017, and higher than the Canadian general population. Participants also reported statistically significantly higher mean overall organizational and operational stress scores, and statistically significantly higher mean item-level scores, on almost every stressor than in 2017. Most PPTe types were statistically significantly associated with screening positive for posttraumatic stress disorder, major depressive disorder, generalized anxiety disorder, social anxiety disorder, and panic disorder, but not alcohol use disorder. Mean overall and stressor-specific organizational and operational stress scores were all statistically significantly associated with positive screens for mental disorders. After controlling for PPTe exposures, other occupational stressors remained statistically significantly associated with screening positive for mental disorders.

**Conclusions:** Increased PPTe exposures reported in 2023 relative to 2017, and associations between PPTe exposures and mental health disorders, highlights the RCMP need for further resources and support for mental health. The current results further evidence other operational and organizational stressors substantially impact RCMP mental health. Additional efforts to effectively target and mitigate occupational stressors other than PPTe may help to reduce mental health challenges among RCMP.

### 2E03: Suicidal Ideation, Planning, and Attempts among Royal Canadian Mounted Police

*Nisbet, Jolan, PhD<sup>1</sup>; Andrews, Katie, PhD<sup>1</sup>; Jamshidi, Laleh, PhD<sup>1</sup>; Shields, Robyn, MSc<sup>1</sup>; Affi, Tracie, PhD<sup>2</sup>; Maguire, Kirby, BA<sup>1</sup>; Mad-den, Steve, BA<sup>3</sup>; Carleton, R. Nicholas, PhD<sup>1</sup>*

<sup>1</sup>University of Regina; <sup>2</sup>University of Manitoba; <sup>3</sup>National Police Federation

**Introduction:** Royal Canadian Mounted Police (RCMP) reported substantial difficulties with suicidal behaviours (i.e., ideation, planning, attempts) in 2017. The suicide-specific concerns have been raised as priorities by the National Police Federation (NPF), policymakers, and lawmakers with requests to better support RCMP mental health. The current study used self-report survey data to provide estimates of past-year and lifetime suicidal ideation, planning, and attempts among RCMP in 2023 relative to 2017 (Carleton et al., 2018). The current study also assessed for associations between suicidal behaviours and mental health.

**Methods:** RCMP participants ( $n=1242$ ; 75.5% male) completed an online survey assessing past-year and lifetime suicidal ideation, planning, and attempts, and mental health disorder symptoms. The survey was collaboratively designed by the research team and the National Police Federation. Cross tabulations and logistical regression models were used to 1) examine the prevalence and association of past-year and lifetime suicidal behaviours across sociodemographic catego-

ries; 2) compare results from 2023 and 2017; and, 3) assess for associations between suicidal behaviours and past and current self-reported symptoms of mental disorders (i.e., posttraumatic stress disorder, major depressive disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, alcohol use disorder, cannabis use disorder).

**Results:** RCMP participating in 2023 reported statistically significantly higher lifetime and past-year suicidal ideation (34.1%; 11.4%) and planning (15.9%; 4.6%) than the 2017 RCMP reports of lifetime and past-year suicidal ideation (25.7%; 9.9%) and planning (11.2%; 4.1%). The reported proportion of lifetime suicide attempts were statistically significantly higher in the 2023 sample (4.0%) than among the previous 2017 sample of RCMP (2.4%). Past-year suicide attempts were too low to be reported.

**Conclusions:** The 2023 results provide contemporary prevalence estimates of suicidal ideation, planning, and attempts among RCMP. The increases in reports of suicidal behaviours among RCMP in 2023 relative to 2017 suggest reductions in stigma and increased stressors. The current results underscore the need for evidence-informed proactive training, ongoing mental health monitoring, and early interventions.

### 2E04: Mental Health Training, Attitudes Toward Support, and Screening Positive for Mental Disorders Among Royal Canadian Mounted Police

*Andrews, Katie L.<sup>1,2</sup>; Jamshidi, Laleh<sup>3</sup>; Shields, Robyn E.<sup>1,2</sup>; Nisbet, Jolan<sup>1,2</sup>; Maguire, Kirby Q., BA<sup>1,2</sup>; Carleton, R. Nicholas<sup>1,2</sup>*

<sup>1</sup>University of Regina; <sup>2</sup>Canadian Institute for Public Safety Research and Treatment; <sup>3</sup>University of Wisconsin-Milwaukee

**Introduction:** Several mental health training programs (e.g. critical incident stress management [CISM], critical incident stress debriefing [CISD], peer support, mental health first aid, Road to Mental Readiness [R2MR]) are available for Royal Canadian Mounted Police (RCMP). The current study helps describe the impact of mental health training programs by examining contemporary RCMP perceptions of, and willingness to access, professional (i.e. physicians, psychologists, psychiatrists, employee assistance programs, chaplains) and non-professional (i.e. spouse, friends, colleagues, leadership) support, along with associations between participant mental health and the training received.

**Methods:** RCMP participants ( $n=911$ ; 75.7% male) completed an online survey June 2022 to February 2023. The survey was collaboratively designed with the National Police Federation to focus on relevant policing variables, including perceptions of support, experience with mental health training, and mental health disorder symptoms. Cross-tabulations were used to assess attitudes towards mental health supports and positive screens for mental health disorders across mental health training categories. Logistic regression models were used to



examine the associations between mental health training categories and mental health.

**Results:** Across all training categories, RCMP reported the highest prevalence for accessing psychologists (66.7% to 81.2%) and a spouse (68.5% to 75.0%) or a friend (48.9% to 62.2%) as an early resource. Relative to 2017 RCMP data, current RCMP who received any training reported higher willingness to access all professional supports, except chaplains, and comparable willingness to access non-professional supports. Participants who received any mental health training reported a lower prevalence of positive screens for all mental health disorders; none of the training categories were statistically significantly associated with changes in odds of screening positive for all mental health disorders.

**Conclusions:** RCMP who received mental health training reported higher willingness to access professional and non-professional supports and were less likely to screen positive for all mental health disorders. The current results indicate an increase in RCMP willingness to access professional supports, but no increase in willingness to access non-professional supports, including RCMP leaders and colleagues. The increased RCMP preference to access a psychologist as an early resource suggests success in efforts to mitigate mental health stigma and supports efforts to provide providing tailored evidence-based training for professional mental health care providers. The variable willingness to access professional and non-professional support suggests there may be additional opportunities to reduce stigma around mental health challenges, and to provide training and support for RCMP spouses, friends, colleagues, and leadership.

### 3C05: An Axe and a Handshake: A scoping review of the transition from public safety occupations

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<sup>1</sup>Queen's University

**Brief Description:** Exiting a public safety occupation (e.g., paramedics, police, firefighters) and entering retirement or alternate employment is unique in many ways. There are heightened risks and demands associated with essential emergency services that require personal sacrifices, dedication, and commitment from public safety personnel (PSP) and the absence of this intense role is significant. PSP leave their professions for various reasons including age-related mandatory retirement, forced retirement due to illness or injury, and voluntary early retirement; little is known about their experiences during the transition. The nature of the exit and planning and resources provided by the organization to support the transition impact outcomes and have implications for the health and wellbeing of former PSP. The objective of this scoping review is to summarize what is known about PSP as they transition from public safety work to retirement, identify gaps in the literature, and guide future research.

**Patient Population:** The methodology for scoping reviews outlined in the five-stage framework outlined by Arksey and O'Malley (2005) was followed. Seven online databases were searched and abstracts independently screened by two reviewers. Database searches were complemented with hand searches of reference lists from papers selected during abstract screening. Papers meeting initial inclusion criteria were categorized by type (i.e., peer-reviewed, grey literature) and underwent full-text screening. The remaining articles were exported into MAXQDA for full-text analysis.

**Results:** Abstract screening of 5,801 papers yielded 128 studies for full-text screening which included seven papers found through hand searching. Forty-five papers were accepted by at least two of three reviewers for data extraction and analysis. High-level themes emerged including cumulative impacts, separation from identity and culture, and buffers which aligned with sub-themes including trauma exposure, stigma, over-identification, loss of peer support, pre-planning, and bridge employment among others. The implications and explicit recommendations derived from the literature include transition programming, screening, facilitating gradual exits and continued connections, and peer support to encourage other interests. Limitations of the existing body of research were also stated emphasizing a lack of diversity in participant samples, concerns about social-desirability bias, and the need for longitudinal data to grasp the transition process from pre-retirement to post-transition.

**Conclusions:** The study concluded that there is a need for planning and support for those exiting public safety professions. Financial planning is the focus of preplanning when it exists. Applied research is needed to understand the psychosocial risk factors and identify key transition resources and program strategies.

### 3E01: Compromised Conscience: An Exploration of Moral Injury in Police Officers, Sheriffs, and Public Safety Communicators in Alberta

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**Introduction:** Moral injury (MI) is a term originally rooted in the context of combat veterans that has garnered broad attention for understanding the psychological toll experienced by diverse professionals working in morally complex environments. MI occurs when an individual's moral conscience is harmed after perceiving or participating in an act of trans-

gressing a personal moral, ethic, or value. Researchers have evidenced that MI is relevant for paramedics and firefighters, but little research has been conducted on MI within policing and public safety communicator (PSC) sectors. A United Kingdom study found MI relevant for police officers working on internet child abuse teams, and a Dutch study found 28% of Veterans and police officers reported experiencing an MI. No research to date has been conducted on MI among North American police or PSC.

**Research Objective:** The current study was designed as a preliminary effort to examine and understand the concept and experience of MI among Alberta police and PSC.

**Methods:** We conducted one focus group (1 female; 4 males) and 14 individual interviews (4 females; 10 males) with police officers, PSC, and sheriffs working in Alberta, Canada. Qualitative thematic analysis as described by Braun and Clark (2022) were used to explore the conception(s), experiences, and challenges faced by personnel in policing and PSC to help researchers better understand the impact moral conflicts, ethical dilemmas, and potentially psychologically traumatic events can have on mental well-being.

**Results:** The current results highlight complexities and challenges associated with defining MI among those working in policing and PSC. However, several participants described many morally challenging situations or potentially morally injurious events (PMIEs) as being frequently encountered during their service; for example, witnessing acts of violence, dealing with the aftermath of traumatic events, or facing ethical dilemmas in decision-making. The researchers identified five key themes: 1) MI as an ambiguous and amorphous term; 2) "it's all just part of the job"; 3) MI as unseen suffering; 4) PMIEs; and, 5) coping and protective factors.

**Conclusions:** The current study contributes to a deeper understanding of MI and PMIE within the context of Canadian policing and PSC. The results provide new insights about efforts required to help Canadian public safety personnel identify, understand, and address PMIEs and MI. The results may also help inform the development of targeted interventions and support strategies to help mitigate the impact of PMIEs and MI and bolster moral resilience among public safety personnel.

### 3E02: A View of Moral Injury: Examining the Effect of Moral Complexities on Psychological Health and Posttraumatic Stress Disorder

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**Introduction:** Firefighters (FFs) are exposed to a greater number of potentially psychologically traumatic events (PPTe) than the general public, raising concerns about their psychological health. FFs are exposed to death and suffering and a quarter of Canadian FFs (25.2%) experience suicidal ideation. FFs also experience potentially morally injurious events (PMIEs) involving the transgression or violation of their morals, ethics, or values. PMIEs can lead to a moral injury (MI), which involves psychological, emotional, social, or spiritual harm. A 2022 qualitative study of Canadian FFs evidenced MI and other moral challenges as having daily workplace relevance. Currently, quantitative research is limited on MI amongst FFs, and the relationship between MI and psychological health among FFs. This study surveyed FFs in Alberta (AB) to determine: 1) if MI reports are heightened; and 2) if there is a relationship between MI and symptoms of posttraumatic stress disorder [PTSD], generalized anxiety disorder [GAD], major depressive disorder [MDD], panic disorder [PD], suicidality, and alcohol use disorders.

**Methods:** Data were collected from 150 AB FFs. Participants completed an electronic questionnaire between April 3 and December 1, 2023 that included demographic information, an MI screening tool, and screening tools for symptoms of several psychological disorders.

**Results:** Participants screened positive for mild ( $n=73$ ; 54%), moderate ( $n=21$ ; 15%), or severe ( $n=1$ ; 1%) MI. Pearson correlations showed positive statistically significant linear relationships between MI scores and symptoms of PTSD ( $r=.70, p<.001$ ), GAD ( $r=.54, p<.001$ ), MDD ( $r=.64, p<.001$ ), and PD ( $r=.50, p=.003$ ), while a statistically significant negative correlation emerged between MI and suicidality symptoms ( $r=-.49, p<.001$ ). A multiple linear regression (Adjusted  $R^2=.55, p<.001$ ) was implemented to examine the variance accounted for by MI ( $\beta=.67, p<.001$ ), gender ( $\beta=-.37, p=.018$ ), marital status ( $\beta=.33, p=.040$ ), age ( $\beta=-.47, p=.002$ ), and spirituality ( $\beta=.48, p<.001$ ) in symptoms of PD. A second regression model (Adjusted  $R^2=.52, p<.001$ ) revealed that MI ( $\beta=.67, p<.001$ ) was significantly associated with PD scores, younger FFs between 18-34 ( $\beta=.48, p=.006$ ) had higher PD compared to FFs who were 50 or above; FFs who identified as gender minorities ( $\beta=-.30, p=.025$ ) reported lower PD compared to men; and non-spiritual ( $\beta=-.82, p=.007$ ) FFs reported lower PD compared to FFs with higher spirituality.

**Conclusions:** Current results suggest FFs with greater MI symptoms were more likely to have PTSD, GAD, MDD, and PD symptoms. Additional studies are necessary to examine FFs and other public safety personnel within populations outside of AB, Canada to understand how MI impacts these professions irrespective of location.

### 3E03: A View of Moral Injury: Examining the Impact of Occupational and Psychosocial Impairments on Moral Complexities among Alberta Firefighters

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**Introduction:** Canadian firefighters (FFs) encounter numerous challenges inherent to their profession, such as emergency responses and exposure to potentially morally injurious events (PMIEs). These events involve actions that violate personal morals or values, potentially leading to moral injury (MI)—a condition marked by psychological, emotional, social, or spiritual harm. MI is increasingly recognized due to its link with other psychological disorders such as posttraumatic stress disorder, depression, and anxiety. However, despite its significance, research exploring the relationship between MI and the specific occupational and psychosocial impairments among firefighters remains limited. Hence, the current study investigated: 1) the prevalence of MI among Alberta FFs, and 2) the relationship between specific occupational and psychosocial impairments and MI among Alberta FFs.

**Methods:** Using a cross sectional study design, a total of 150 Alberta FFs completed an online questionnaire from April 3rd to December 1st, 2023. Sociodemographic variables, and other occupational and psychosocial impairment were examined in association with MI using a multivariate linear regression analysis.

**Results:** About 70% (n = 135) of Alberta FFs reported experiencing MI symptoms, with about 54% (n = 73) reporting a mild form, while 15% (n = 21) of FFs reported a moderate form of MI symptoms. A series of multivariate linear regressions was conducted to examine occupational and psychosocial factors associated with MI scores. Each model controlled for spirituality as a covariate and assessed different occupational and psychosocial impairments among firefighters as the independent variable. 1) The first model ( $R^2 = .14, p < .05$ ), found that an increase in perceived organizational support ( $\beta = -.23, p < .05$ ) and being moderately or severely spiritual ( $\beta = -5.55, p < .05$ ) is associated with decreased MI scores. 2) The second model ( $R^2 = .28, p < .05$ ) was notably the strongest and showed that decreased levels of burnout ( $\beta = .69, p < .05$ ) and being moderately or severely spiritual ( $\beta = -3.76, p < .05$ ) is associated with decreased MI scores. 3) A final model ( $R^2 = .20, p < .05$ ) showed that decreased levels of secondary traumatic stress ( $\beta = .51, p < .05$ ) and being moderately or severely spiritual ( $\beta = -6.11, p < .05$ ) can decrease MI scores.

**Conclusions:** Our findings highlight the complex interactions between the occupational and psychosocial impairments of Alberta FFs and their mental health, particularly concerning MI. This underscores the need for comprehensive strategies that integrate measures to enhance social support, manage stress or burnout, and promote the mental well-being of FFs.

### 3E04: A Scoping Review of the Components of Moral Resilience: Its Role in Addressing Moral Injury or Moral Distress for High-Risk Occupation Workers

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**Introduction:** High-risk occupation workers (HROWs), particularly public safety personnel, are often exposed to potentially morally injurious events (PMIEs) which can contribute to moral distress (MD) or moral injury (MI). Moral resilience (MR) has been proposed as a protective or moderating factor to protect HROWs from harm caused by PMIE exposures. Examining the potential for MR to mitigate MI among HROWs may provide important insights for proactive efforts and interventions. The current scoping review is predicated on Young and Rushton's (2017) MR concept analysis and PMIE exposure impacts being underscored as primary stressors for HROWs during the COVID-19 pandemic. Young and Rushton (2017) found that there was no unifying MR definition and investigation of the concept and capacity of MR to mitigate MI was necessary. The current review was designed to: 1) update the definition of MR to a broader context of HROWs; 2) identify components of MR for HROWs; and 3) determine demographic variables that may impact MR development.

**Methods:** A systematic review was conducted with an initial search of five electronic literature databases (MEDLINE, EMBASE, Web of Science, SCOPUS, and CINAHL). The search occurred between the original dates of inception to September 1, 2023. A narrative synthesis was employed to organize and present the findings thematically following the Arksey and O'Malley (2005) analytical framework.

**Results:** Database search results identified 21 studies after full-text screening was complete. The 21 studies all focused on healthcare workers (HCWs). In the current scoping review, six themes were identified to promote MR that HROWs can utilize (i.e., self-care, self-regulation, moral compass, moral courage, communication, and social support at work), alongside three key demographic variables that can impact or foster MR (i.e., experience, religion/spirituality, gender/sex). The following

MR definition was proposed that offers an inclusive definition for diverse HROWs: *Moral resilience is the ability of an individual or team to develop or implement effective coping strategies that foster, maintain, or restore integrity when faced with potentially morally injurious events.*

**Conclusions:** Six themes in addition to three demographic variables were identified which HROWs can utilize to help prepare for and overcome PMIEs, MD, or MI and foster MR. The current MR literature is limited by an exclusive focus on HCWs which may not generalize to other HROWs. Further research is needed on the strategies used by demographically diverse HROWs to develop MR and protect from or moderate PMIEs, MD, and MI.

#### **4A02: Canadian Security Intelligence Service Operational Employees: Experiences of Moral Harm, Distress, or Injury**

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**Introduction:** Canadian Security Intelligence Service (CSIS) operational employees are first responders who ensure national security and the safety of all Canadians domestically and abroad. They are security and intelligence officers with variable and diverse occupational responsibilities and required skill sets. Despite their role in protecting the security of the country, CSIS employees are not recognized as first responders in Canada and are often unknown to the public—many do not know what or who CSIS is. Thus, although instrumental in national security, CSIS employees are unacknowledged and unrecognized in society—a potential source of moral harm, distress, or injury.

**Methods:** We conducted over 40 semi-structured interviews with CSIS operational employees. In our analysis, we focus primarily on responses to the questions around describing their occupational responsibilities and if they feel acknowledged for their role in public safety (and by whom). We transcribed the interviews using non-cloud-based software for confidentiality purposes and coded for emergent themes. First, we constructed a code book from a sample of 5 transcripts; second, we coded all transcripts according to the codebook using QSR NVivo software. We analyzed the themes using a semi-constructed grounded approach as we were unsure of our findings.

**Results:** Participants overwhelmingly described their occupational responsibilities as the protection of the public by means of maintaining and ensuring national security. However, they felt unrecognized and unacknowledged by society for their role in public safety, which was intensified by the restrictions on sharing details about their occupational role, their responsibilities, and even the service for which they work. The combination of their interpretation of their role and their lack of

recognition for it – particularly by not being recognized as first responders – was a source of moral harm, distress, and even potential injury. Many participants, however, did feel recognized by their employer.

**Conclusions:** CSIS is an underrecognized public safety service whose operational employees are instrumental to the safety and security of Canada. They too experience moral harm, distress, or injury, resulting from their operational requirements or exposures, but also in part informed by the lack of public recognition or awareness and their inability to speak to occurrences in their work.

#### **5A03: Understanding the Impact of Organizational Culture on Sexual and Gender-based Harassment and Discrimination among Royal Canadian Mounted Police**

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**Introduction:** There have been concerns about sexual- and gender-based harassment and discrimination since women were first allowed to join the Royal Canadian Mounted Police (RCMP; Hall, 2007; Linden, 1985; MacQueen, 2011; Poole, 2021). Results of the Merlo Davidson class action settlement indicated over 2,200 women RCMP and public service employees have experienced gender- and sexual orientation-based harassment and discrimination (Bastarache, 2020). Women RCMP have described an “old boys’ club” that devalues them, and critics have argued that the RCMP promotes a culture of silence and insular mentality (Gerster, 2021; MacDonald & Gillis, 2015). The claims collectively indicate the RCMP may be influenced by hegemonically masculine elements. Hegemonic masculinity refers to a specific form of idealized hypermasculinity that has become greatly valued, facilitating oppression of women, gender diverse individuals, and non-adherent men (Connell & Messerschmidt, 2005; Donaldson, 1993). To date, there has been no empirical research assessing RCMP perceptions of their organizational culture, their experiences of gender- and sexual-based harassment and discrimination within their organizational context, nor their vision for meaningful and attainable solutions.

**Methods:** A representative sample of RCMP ( $n=871$ ; 76.3% men; 83.4% White) answered an open-ended question that examined participants’ perspectives of how the RCMP can work to eliminate harassment and discrimination in RCMP workplaces, recognizing that meaningful changes across large organizations can take a lot of time and effort. Responses were analyzed inductively through a critical feminist lens, using an open-coding approach. Frequency analysis was used to assess for recurrent concrete recommendations and thematic analysis was performed to identify themes.



**Results:** The most common concrete recommendations were to enforce actual consequences ( $n=172$ ), to have more effective leadership ( $n=138$ ), and to change the promotion process ( $n=116$ ). Additionally, three themes were identified: *Walking the Talk: Broad Accountability*; *Out with the Old, in with the New: Largescale Cultural Change*; and *Alternative Perspective: An Exaggerated or Non-Existent Problem*.

**Conclusions:** Results indicate many RCMP have a two-tiered conceptualization of gender- and sexual-based harassment and discrimination within the RCMP. On one level, participants hold individuals responsible and believe that meaningfully punishing perpetrators would help address the problems. On another level, participants believe the RCMP as an organization can have a powerful role in addressing the problems with direct, active, and consistent support from the RCMP leadership. Participant responses also evidenced the hegemonically masculine organizational elements posited as contributing to the problems. Participant suggestions provide potential actionable solutions.

### **6B01: “If you’re being forced, you’re being forced”: A qualitative examination of how overtime impacts correctional officers in Canada.**

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**Introduction:** Staffing shortages and organizational challenges are common in correctional work environments and can catalyze both organizational and operational job stress. Canadian correctional institutions operate with insufficient staffing levels, leading to occupational stress that negatively affects prison functioning, as well as staff and prison resident wellness. Literature suggests a direct correlation between staffing levels and correctional officer (CO) wellness, but little is known about the nuances of the effects of forced overtime on CO well-being.

**Methods:** Drawing on semi-structured interviews conducted with federally employed COs in Canada ( $n = 93$ ), this qualitative study examines the effects of forced overtime on the health and wellness of COs. Employing a semi-grounded approach to data analysis, patterns and emergent themes were discerned without categories precogitated, with a focus on participant experiences and expressed similarities across accounts.

**Results:** Findings focus on the relationship between staff shortages, overtime, mental health, and a perceived lack of agency. Participant responses indicate overtime as a source of stress for COs, with participants’ narratives suggesting the strain imposed by overtime is largely associated with control (including agency), demand (organizational, operational, and personal stress) and support (job-related and social).

**Conclusions:** The element of control and the role of agency is a principal factor in CO experiences with overtime – a finding not previously described in the extant correctional literature. We found the occupational and organizational demands of correctional work have become overwhelmingly intensive because of inadequate staffing levels, emergency situations, unpredictable shift work and, ultimately, unsafe work circumstances. Resultant stress and burnout experienced by COs are exacerbated by these challenges and the need for operational planning. Practical implications and strategies to potentially mediate the effects of forced overtime in correctional spaces are discussed.

### **6D01: Public Safety Communicators in Canada: Health and Wellness**

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**Introduction:** Public safety communicators, such as 911 operators, call-takers, dispatchers, and tactile support communicators, like other emergency responders, are routinely exposed to potentially psychologically traumatic events (PPTe) as a part of their occupation. Such exposure often results in Operational Stress Injuries (OSIs), a non-medical term for mental health disorders resulting from work. This current article presents and discusses results from mental health screenings in a cross-Canada sample ( $N=694$ ; 74.2% women) of communicators.

**Methods:** Indications of potentially clinically significant symptom clusters and symptom severity were assessed using the following self-report screening measures: the PTSD Check List 5 (PCL-5); Patient Health Questionnaire (PHQ-9); PD Symptoms Severity Scale, Self-Report (PDSS-SR); the 7-item GAD scale (GAD-7); and the Alcohol Use Disorders Identification Test (AUDIT). Data was collected through an online survey in 2020/2021. Potential participants were notified of our study via a recruitment email distributed to the entire membership of APCO Canada. Participants were grouped into demographic categories for comparison. Complete case analyses were used throughout. Correlation matrices were computed to examine the correlations between symptom scores on each screening measure in the total sample and for each specific PSP category separately. All correlation tests were conducted using a two-tailed alpha level of 0.05. No correction for multiple testing was used because of the study’s exploratory nature.

**Results:** Estimates of PTSD, Major Depressive Disorder, Generalized Anxiety Disorder, Panic Disorder, and Alcohol Use Disorder confirm that the prevalence of mental health disorders in communicators is higher than in the general population, as is the case for most occupational groups in public safety. Wom-

en reported significantly more positive screening than men (ORs = 1.33-3.25), especially for Generalized Anxiety Disorder (ORs=1.53-5.15). Overall, the study revealed that, in comparison with other public safety personnel, a larger proportion of communicators screened positive for Generalized Anxiety Disorder (19.2%) and Panic Disorder (14.4%). The study is marked by several limitations: The sample was self-selected, the sampling method prohibited knowing the actual response rate, and the reliability and validity of self-reported screening tools relative to clinician administrative interviews remain ambiguous.

**Conclusions:** Limitations include a sampling method that prohibited knowing the response rate and the reliability and validity of self-reported screening tools relative to clinician administrative interviews. Future research should explore the contexts underpinning communication mental health (e.g., PPTe associated with organizational, operational, and job-related stressors) and consider training and wellness interventions' role in facilitating coping strategies and organizational change.

### 6D02: Evaluating the Impact of a Decompression Time and Mental Stress Leave Pilot Policy in an Ontario Paramedic Organization

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**Program/Intervention Description:** Approximately half (49%) of Canadian paramedics screen positively for a mental health disorder (e.g., posttraumatic stress disorder) at any given time (Carleton et al., 2018) due to frequent potentially psychologically traumatic event (PPTe) exposures. Niagara Emergency Medical Services (EMS) has implemented a new mental disorder mitigation policy entitled "Decompression Time and Mental Stress Leave Days." Immediately following a PPTe, any employee can choose to take *decompression time* and be offered access to peer support and other mental health resources. An employee unable to complete the remainder of their shift after the decompression time is granted additional days off (up to 2) without impacting their sick time, lieu time, or vacation bank. The idea is that allowing staff to feel supported and use their own coping strategies helps build resiliency and mitigate PPTe impacts. The policy was piloted in April 2022 and has been ongoing since.

**Evaluation Methods:** The current policy was evaluated by examining Ontario Workplace Safety Insurance Board (WSIB) outcomes for the 2023 year. Areas evaluated included days lost over the entire service, days lost over paramedic claims, days lost related to the mental health of the entire team, days lost related to the mental health of paramedics, costs associated with paramedic mental health claims, and costs associated with all paramedic claims.

**Results:** As of January 2024, Niagara EMS services has seen a decrease in days lost over the entire service (down by 4% or 186 days), days lost over paramedic claims (down by 2% or 99 days), days lost related to the mental health of paramedics (down by 4% or 57 days), costs associated with paramedic mental health claims (down 7% or \$24,000), and costs associated with all paramedic claims (down by 6% or \$24,000).

**Conclusions:** The changes associated with the new policy demonstrate person-centred leadership approaches that encourage paramedics to use their own coping skills, provides access to mental health resources, and creates a psychologically safe workplace which potentially contributes to decreased days lost and costs for Niagara EMS. Further research with this organization and others implementing person-centred approaches to supporting their employees' mental health is vital to build the evidence base for these policies.

### 6D04: Les comportements suicidaires chez les agents des services correctionnels : Comprendre leur développement pour mieux prévenir

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**Introduction:** Le personnel de la sécurité publique (PSP) représente une population à risque de développer des comportements suicidaires (idéations et tentative). Les agents des services correctionnels (ASC) sont une sous-population pour laquelle la prévalence des idéations suicidaires et des tentatives de suicide est nettement plus élevée que dans la population générale. Il existe cependant peu d'écrits sur les facteurs associés aux comportements suicidaires de ces travailleurs essentiels. Il est primordial de produire des connaissances pour mieux comprendre comment ces comportements suicidaires se développent. Même si les ASC provinciaux partagent des facteurs de risque avec d'autres PSP (sexe, masculinité traditionnelle, exposition à des événements potentiellement traumatique), leur taux de comportements suicidaires est plus élevé. Notre objectif général est d'explorer, dans une perspective écologique, le développement des comportements suicidaires chez les ASC provinciaux

**Méthodes:** Un devis qualitatif exploratoire est utilisé. Un comité avisé composé de représentants du ministère de la Sécurité publique et du syndicat des agents des milieux correctionnels est en place pour développer des connaissances scientifiques solides et ancrées dans les réalités des milieux. Ce

sont 25 ASC, variés sur les plans du sexe, du genre, de l'âge, de l'appartenance ethnique et du milieu de pratique et ayant eu des comportements suicidaires durant leur emploi au MSP, qui ont participé à la collecte des données. L'analyse thématique des données est en cours.

**Résultats:** Dans un premier temps, les résultats préliminaires permettent de constater que pour que la recherche auprès de cette population de travailleur soit possible il est primordial de travailler en étroite collaboration avec le milieu. La recherche participative est donc une nécessité pour bien saisir les enjeux propres à la réalité de ces milieux.

Du point de vue du développement des comportements suicidaires chez cette population, il s'agit d'un processus complexe et multifactoriel. Les facteurs qui entrent en jeu sont autant de l'ordre de l'individu lui-même, de son environnement social, que du contexte organisationnel dans lequel il évolue.

**Conclusions:** Ce projet met en évidence que pour les ASC comme pour la population générale les comportements suicidaires sont multidéterminés. Toutefois, le contexte de travail dans lequel ils évoluent peut jouer un rôle négatif. Il est faut sensibiliser les organisations de travail et les gestionnaires à ces facteurs de risque. Un changement de culture face aux enjeux de santé mentale, le soutien par les pairs, l'amélioration de l'offre de service pourraient être des moyens de prévention du suicide à explorer auprès de cette population.

### 6E01: Skill Retention One Year after Emotional Resilience Skills Training for Diverse Public Safety Personnel

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**Introduction:** Public safety personnel (PSP) are regularly exposed to potentially psychologically traumatic events (PSTE), which increases their risk for the development of posttraumatic stress injuries (PTSI). To mitigate PTSI, the Royal Canadian Mounted Police Protocol, including Emotional Skills Resilience Training (ERST), was adapted for diverse PSP. ERST focuses on skill development that facilitates an approach oriented stance toward emotions, thereby reducing reliance on avoidant coping methods. The current study was designed to evaluate ERST skill acquisition and retention.

**Methods:** Participants were serving firefighters, municipal police officers, paramedics, and public safety communicators who completed a 13-week ERST program. To assess retention of the ERST skills, participants completed the Unified Protocol Behavioural Avoidance Questionnaire (UPBAQ), the Unified Protocol Cognitive Questionnaire (UPCQ), and the Unified Protocol Knowledge Acquisition (UPKA) at three time points;

1) pre-training ( $n = 189$ ); 2) post-training ( $n = 114$ ); and 3) 1-year follow-up measures ( $n = 56$ ). Two repeated-measures analysis of variance (ANOVA)  $F$  tests were conducted. The first model included pre-training and post-training scores on the UPBAQ and UPCQ for participants who completed both pre-training and post-training measures, regardless of their 1-year follow up participation. The second model compared UPBAQ, UPCQ, and UPKA scores for participants who completed measures at all three time points.

**Results:** For the first model, there were statistically significant differences between pre-training and post-training measures, such that scores on the UPCQ increased ( $p < .001$ ,  $d = .247$ ) and scores on the UPBAQ decreased ( $p < .01$ ,  $d = .062$ ) at post-training. For the second model, there were statistically significant differences between pre-training and 1-year follow up, such that scores on the UPCQ increased ( $p < .001$ ,  $d = .150$ ) and scores on the UPBAQ decreased ( $p < .05$ ,  $d = .113$ ) at 1-year follow up. For the second model, there were no statistically significant differences between pre-training and post-training scores on the UPCQ or the UPBAQ and between post-training and 1-year follow up on the UPCQ, UPBAQ, and UPKA.

**Conclusions:** Participants who completed measures at all three time points retained knowledge of the ERST at 1-year follow-up. They also had decreased emotional avoidance and increased use of cognitive coping skills. The current study provides evidence that ERST is effective at reducing emotional avoidance and increasing cognitive coping skills, even after 1-year follow-up.

### 6E02: Mental Health Disorder Symptom Changes Among Diverse Public Safety Personnel After Emotional Resilience Skills Training

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<sup>10</sup>McGill University; <sup>11</sup>Research and Strategic Partnerships, RCMP Depot Division; <sup>12</sup>Thompson Rivers University; <sup>13</sup>Memorial University of Newfoundland; <sup>14</sup>Queen's University

**Introduction:** Public safety personnel (PSP) are frequently exposed to events that are potentially psychologically traumatic. The exposures potentiate posttraumatic stress injuries (PTSI), including posttraumatic stress disorder (PTSD). The Royal Canadian Mounted Police (RCMP) Protocol was designed to mitigate PTSD using ongoing monitoring and PSP-delivered Emotional Resilience Skills Training (ERST) based on the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders. The RCMP Protocol was adapted for diverse serving PSP. The current study assessed its efficacy among treatment completers in reducing mental health disorder symptoms post-training and at one-year follow-up.

**Methods:** Participants were diverse Canadian PSP ( $n = 119$ ; 34% female) including firefighters, municipal police, paramedics, and public safety communicators invited to complete self-report survey assessments and be administered the structured Mini International Neuropsychiatric Interview. Assessments were made at pre- and post-training in the ERST protocol, and at one year follow-up. Survey self-report mental health symptom measures included assessments of current posttraumatic stress disorder [PTSD], major depressive disorder [MDD], generalized anxiety disorder [GAD], social anxiety disorder [SAD], panic disorder [PD], and alcohol use disorder [AUD]. Clinical interviews similarly assessed current criteria for these disorders, while also assessing criteria for a past diagnosis of MDD or past major depressive episodes [MDE].

**Results:** At pre-training, male PSP evidenced higher scores on self-report assessments of AUD than their female counterparts ( $p < .01$ ); while females were more likely to screen positive for PD ( $p < .05$ ) based on self-report measures. Statistically significant symptom reductions in PTSD, MDD, GAD, and SAD were evidenced immediately post-training (all  $ps < .01$ ); with reductions in GAD, SAD, and AUD symptoms evidenced through one-year follow-up compared to pre-training levels (all  $ps < .05$ ). The largest post-training improvements in symptom scores were observed among firefighters (Cohen's  $ds = 0.40$  to  $0.71$ ), followed by police (Cohen's  $ds = 0.28$  to  $0.38$ ), paramedics (Cohen's  $ds = 0.20$  to  $0.56$ ), and public safety communicators (Cohen's  $ds = 0.05$  to  $0.14$ ).

**Conclusions:** Ongoing monitoring and PSP-delivered ERST, can produce small to large treatment effects on mental health disorder symptoms among diverse PSP, or mitigate PSP mental health challenges, with variations influenced by differences in mental health at pre-training and organizational supports. The current results indicate evidence-informed training can support PSP mental health.

### **6E03: Suicidal Ideation, Planning, and Attempts Changes among Diverse Canadian Public Safety Personnel after the Emotional Resilience Skills Training**

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**Introduction:** Public Safety Personnel (PSP) report experiencing on-duty occupational stressors and potentially psychologically traumatic events, which increase the odds of screening positive for mental health disorders and the risk of suicide. The study provides estimates suicidal ideation, planning, and attempts among Canadian PSP, including firefighters, municipal police, paramedics, and public safety communicators, and assesses associations with sociodemographic characteristics, and Emotional Resilience Skills Training (ERST).

**Methods:** Participants ( $n=186$ , 39.5% female) provided socio-demographic information were administered the structured Mini-International Neuropsychiatric Interview (M.I.N.I.) at three time points relative to the ERST: pre-training, post-training, and 1-year follow-up.

**Results:** At pre-training, PSP reported past-month suicidal ideation ( $n=24$ ; 12.9%) and planning ( $n=7$ ; 3.8%), and no attempts. At post-training, PSP reported lower past-month suicidal ideation ( $n=12$ ; 10.1%), suicidal planning ( $n<5$ ), and no attempts. At the 1-year follow-up, PSP reported past-month suicidal ideation ( $n=7$ ; 12.5%), and no planning or attempts. The odds of reporting one or more lifetime suicide attempts were statistically significantly 3.14 times greater in women compared to men ( $p < .01$ ), and 3.03 times greater in females compared to males ( $p < .01$ ). PSP who reported being married or in a common-law relationship at pre-training were statistically significantly less likely to report one or more lifetime suicide attempt than PSP who reported being single ( $p < .05$ ). Paramedics were statistically significantly more likely to report one or more lifetime suicide attempts compared the other PSP sectors ( $p < .01$ ).

**Conclusions:** The results evidence suicide-related challenges for PSP, particularly for PSP who self-identify as women and females. The study suggests sector-specific differences in suicide attempts, indicating unique sector-specific challenges among PSP. The results evidenced reductions in suicidal ideation and planning from before to after ERST; however, attrition impacted analyses at 1-year follow-up. Additional sector-specific mixed-methods research would help inform further suicide mitigation strategies.



## 6E04: Putative Risk and Resiliency Factors After Emotional Resilience Skills Training Among Diverse Public Safety Personnel

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**Introduction:** Posttraumatic stress injuries (PTSI; e.g., post-traumatic stress disorder, major depressive disorder) are prevalent among public safety personnel (PSP; e.g., correctional workers, firefighters, paramedics, police, public safety communicators) due to PSP's frequent exposure to potentially psychologically traumatic events. Emotional Resilience Skills Training (ERST) is a cognitive behavioural training program based on the Unified Protocol for the Transdiagnostic Treatment of Emotional Disorders (i.e., Unified Protocol) that was developed specifically for PSP. The current study was designed to investigate whether ERST is associated with reduced putative risk factors (i.e., modifiable individual difference variables associated with mental health challenges), and increased individual resilience, among PSP.

**Methods:** The PSP-PTSI Study employed a longitudinal prospective sequential experimental cohort design that engaged each participant for approximately 16 months. PSP from diverse sectors (i.e., firefighters, municipal police, paramedics, public safety communicators) completed self-report measures of several putative risk variables (i.e., anxiety sensitivity, fear of negative evaluation, illness and injury sensitivity, intolerance of uncertainty, pain anxiety, state anger) and resilience at three time points: pre-training ( $n = 191$ ), post-training ( $n = 103$ ), and 1-year follow-up ( $n = 41$ ). Scores were statistically compared across time points using multi-level modelling to assess for changes over time.

**Results:** Participants reported statistically significantly lower scores at post-training (vs. pre-training) on all putative risk variables except for pain anxiety, and statistically significantly higher resilience. Changes in scores from pre- to post-training were sustained at 1-year follow-up.

**Conclusions:** Results indicate that ERST is associated with reductions in several putative risk variables and improvements in resilience among PSP, which could in turn reduce PSP's risk of developing PTSI. Given the onset of the COVID-19 pandemic during data collection, the current results are particularly notable as the pandemic was associated with increased chal-

lenges for PSP, further supporting the effectiveness of ERST in supporting the mental health of PSP.

## 7A01: Deep Brain Re-orienting: A novel treatment for post-traumatic stress disorder

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**Introduction:** Our understanding of post-traumatic stress disorder (PTSD) has deepened with advances in neuroscience, leading to the development of psychotherapeutic interventions that leverage these insights. Deep Brain Reorienting (DBR) is one such intervention, targeting the brainstem-level processes implicated in traumatic events. Given the limitations of current treatments—such as non-response rates of up to 50% and dropout rates exceeding 18%—DBR has emerged as a promising candidate for addressing PTSD.

**Objective:** This study aims to assess the effectiveness of an eight-session clinical trial comparing videoconference-based DBR to a waitlist (WL) control group for individuals with PTSD.

**Methods:** Fifty-four PTSD patients were randomly assigned to either DBR ( $N = 29$ ) or WL ( $N = 25$ ). Their PTSD symptom severity was measured using the Clinician Administered PTSD Scale (CAPS-5) at baseline, post-treatment, and three-month follow-up. This randomized controlled trial is part of a registered clinical trial (NCT04317820) with the U. S. National Institute of Health.

**Results:** At post-treatment and the three-month follow-up, significant differences were observed between the DBR and WL groups in CAPS-total and its subscale scores (re-experiencing, avoidance, negative alterations in cognitions/mood, alterations in arousal/reactivity) (CAPS-total: Cohen's  $d = 1.17$  at post-treatment; Cohen's  $d = 1.18$  at 3MFU). The DBR group showed significant reductions in CAPS-total and all subscale scores from pre-treatment to post-treatment (36.6% reduction in CAPS-total) and from pre-treatment to 3MFU (48.6% reduction in CAPS-total), whereas the WL group did not show significant decreases. Post-DBR, 48.3% at post-treatment and 52.0% at 3MFU no longer met PTSD criteria. Attrition was minimal, with only one participant not completing treatment and eight participants lost to the three-month follow-up.

**Conclusions:** These results suggest that DBR is a promising, well-tolerated treatment rooted in theoretical advancements regarding subcortical mechanisms in PTSD and its symptoms. Further research with larger samples, neuroimaging data,

and comparisons with other psychotherapeutic approaches is warranted.

### 7D01: Improving Mental Health Care for Canadian Public Safety Personnel through the development of Cultural Competency Education

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**Introduction:** Public safety personnel (PSP) are regularly exposed to potentially traumatic events in the workplace and are at an increased risk for a host of mental health difficulties, including post-traumatic stress injury (PTSD), substance use disorder, major depressive disorder, and anxiety disorders. During COVID-19, PSP faced additional mental health impacts from increased stress and workload challenges. Collectively, these challenges have taken a toll on their mental health and many PSP are now leaving their jobs due to poor mental health. Adequately address the mental health of PSP requires culturally competent mental health providers who have an understanding of PSP occupations, including the physical and psychological demands of the job, exposure to traumatic situations, and occupational values. The purpose of this study is to develop a cultural competency framework and training program to equip crisis line responders and peer supporters to meet the mental health needs of Canadian PSP more effectively.

**Methods:** PSP from across Canada were invited to participate in an online survey and a virtual semi-structured interview from June 2021 to May 2022 (Phase 1), and from December 2022 to June 2023 (Phase 2). Development of the competency framework will be guided by Marrelli's et al., (2005) 6-step approach. Descriptive statistics will be used to characterize the sample and framework analysis will be used to sort the interview data into competency domains (awareness, knowledge, and skills). An advisory group, including frontline PSP with lived experience, will review and further refine the cultural competency framework.

**Results:** In total, over 600 surveys and 60 interviews have been completed by PSP from diverse occupations (e.g., police officers, firefighters, paramedics, correctional workers, and public safety communicators). Data analysis is currently underway and the cultural competency framework will be completed by the conference deadline.

**Conclusions:** The PSP cultural competency framework provides a critical step in equipping mental health providers with evidence-informed and culturally responsive supports for PSP. The results of this project will also provide a foundation to de-

velop novel interventions and programs to care for this critical workforce and to inform policy changes for future generations of Canadian PSP.

### Poster Presentations

#### P127: Support After First Responder Suicide In Australia For Families and Peers

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**Introduction:** First responder personnel, including police officers, firefighters, and paramedics, face unique occupational stressors and are known to be at an elevated risk for suicide. In Australia, there has been an increase in the rates of suicide in emergency services over the last 10 years. The suicide of a current or former Emergency Service personnel member is a tragic event that affects their families, loved ones, or co-workers in unique ways, and civilian resources and services are often inappropriate for these groups. There is a need to better understand and support families and co-workers of Emergency Service personnel when bereaving a service suicide through effective postvention programs. Consequently, this research project aims to better understand the perceptions and experiences of those impacted by the suicide death of an Emergency Services member, and the barriers and enablers to those individuals accessing support services.

**Methods:** This qualitative study is collecting data via an online qualitative survey with open-ended questions, and an optional semi-structured interview co-developed with a lived experience stakeholder advisory committee. The survey focuses on the barriers and enablers to knowledge of, access to, and utilisation of services for the families and co-workers of first responders who have died by suicide. Interview questions are developed out of survey responses under a critical realist grounded theory framework, allowing us to better understand what is needed, and systematically collect and analyse data in an iterative, cyclical process to unpack contextual structures, mechanisms, perceptions, and experiences that may impact those needs.

**Results:** Preliminary survey and interview data will be presented, outlining what factors impact the knowledge of, access to, and utilisation of services for the families and co-workers of first responders who have died by suicide. Implications for generating information guides and culturally appropriate support after suicide resources and training will be discussed.

**Conclusions:** Listening to the experiences and perceptions of family members and co-workers who have been impacted by suicide will increase our understanding of what is needed to improve the postvention supports available to family members and co-workers impacted by the suicide death of an

Emergency Services member. This will allow us to develop a national framework and best practice guideline for postvention within emergency services communities with the hope that this framework would be designed to be something that is capable of being legislated into policy in Australia. It may also support informing of international postvention policies and decision making.

### **P128: Self-Monitoring as Measurement Based Care During Royal Canadian Mounted Police Cadets Training**

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**Introduction:** Professionals at risk for posttraumatic stress injuries (e.g., Royal Canadian Mounted Police; [RCMP]) may benefit from regularly using evidence-based screening tools (e.g., period health screening; safeguard programs) facilitating early access to evidence-based interventions that include Measurement Based Care (MBC). Preliminary evidence suggests such interventions may inherently support mental health as a function of self-monitoring, meta-cognition, and enhanced agency. The longitudinal RCMP Study includes multimodal assessments of cadets and members from pre-training (i.e., starting the Cadet Training Program [CTP]) to pre-deployment (i.e., ~2 weeks prior to deployment), and for five years thereafter. The current study objectives include: 1) testing for relationships between mental disorder symptoms and mental health self-monitoring at daily and monthly intervals; and 2) exploring trends in participation, adherence, and engagement with self-monitoring.

**Methods:** RCMP cadets ( $n=394$ ; 36% women; 36% females) completed the 26-week CTP alongside daily and monthly self-monitoring surveys, and mental health assessments at pre-training and pre-deployment. Mental disorder symptom scores were compared across sociodemographic categories using independent samples *t*-tests and one-way analyses of variance with Holm-Bonferroni adjustments. Multiple linear regression models tested for associations between changes in symptoms of anxiety-, depressive-, and trauma-related disorders from pre-training to pre-deployment, and frequencies of daily and monthly self-monitoring, adjusted for pre-training mental health disorder symptom scores and sociodemographic covariates, reflected in effect sizes described by Spearman's *rho*-values and Pearson's *R*-values.

**Results:** There were no sociodemographic differences, including based on sex or gender, in symptom change scores or frequency of surveys completed. Reductions in mental health disorder symptoms were moderately inversely associated (all  $p$ -values<.05) with frequency of daily and monthly self-mon-

itoring. Comparable improvements were observed for daily (Spearman's *rho*-values from -.11 to -.52) and monthly (Pearson's *R*-values from -.37 to -.69) frequencies.

**Conclusions:** Evidence-based self-monitoring was inversely associated with mental disorder symptoms among sociodemographic diverse participating RCMP Cadets during the CTP. Evidence-based self-monitoring may encourage meta-cognitive practices, support active engagement with positive choices for mental health, facilitate earlier access to care, and support MBC effectiveness. Self-monitoring may be an under-utilized and readily accessible intervention, and a tool for MBC or evaluating intervention effectiveness in clinical trials. The current results provide useful information about participation, adherence, and engagement with self-monitoring that may inform the use of self-monitoring as a proactive intervention for mental health. The current results warrant replication and extension of using self-monitoring to directly and indirectly support the mental health of professionals at risk for posttraumatic stress injuries.

### **P130: Experiences of Public Safety Personnel Accessing a Peer-Led Caring Contact Intervention Following Calls to a Crisis Line**

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**Introduction:** Public safety personnel (PSP), including military personnel and veterans, face elevated risks of post-traumatic stress injury (PTSI) and suicidality. Research on identifying and intervening with PSP in crisis is urgently needed, with a pressing need for effective immediate interventions tailored to PSP at high-risk times. Barriers to help-seeking and access to support for PSP include mental health stigma and a lack of availability of targeted crisis interventions. Here we study a novel CC-PI, whose conceptual foundation draws from previous research demonstrating acceptability of peer support to PSP and effectiveness of early Caring Contacts follow-up in reducing suicide and instilling hope in high-risk individuals at high-risk times. In the CC-PI, trained PSP peer support follow-up calls are offered to all PSP who call Canada's 988 national crisis line. This study evaluates the impact and experiences of the CC-PI for PSP in crisis, thus bridging the gap in research on intervening with PSP in crisis.

**Methods:** This mixed-methods pilot study aims to assess the feasibility, acceptability, and perceived impact of CC-PI and to further understand experiences and needs of PSPs in crisis.

CC-PI training was provided to volunteer peer facilitators from Boots on the Ground (BOTG), a non-profit organization providing 24/7 peer support to PSP. Call responders from 988 identified PSP callers, and offered 2 follow-up calls from a BOTG peer facilitator. At the end of the first or second follow-up CC-PI call, BOTG peer facilitators asked PSP callers about interest in information about a research study to better understand the needs of PSP in crisis.

Participants complete post-intervention surveys on their experience with the intervention, any perceived impact, and semi-structured interviews about their experience, unmet needs and recommendations for improving the intervention.

The association between demographic and outcome variables will be analyzed using an ANOVA. We will use inductive thematic analysis semi-structured qualitative interviews about the experiences of the CC-PI to illuminate the quantitative data collected.

**Results:** Data collection is underway with preliminary results expected by late Summer 2024.

**Conclusions:** This study addresses a gap in research on interventions for PSP in crisis by evaluating an integrated peer support and caring contact intervention in PSP callers to a crisis line. This study will inform the development of interventions to mitigate adverse outcomes and prevent suicide within PSP communities while offering valuable insights into PSP in crisis. Future research involves spread and program evaluation of the CC-PI.

### **P131: The Relationship between Childhood Adversity and Resilience among Royal Canadian Mounted Police Cadets: Evidence from The Royal Canadian Mounted Police Study**

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**Introduction:** Public safety personnel (PSP) often encounter traumatic events while on duty, but little is known about experiences before joining the profession, such as Adverse Childhood Experiences (ACEs). ACEs can impede PSPs' resilience to recover from trauma, impacting their job performance. The current study was designed to (1) examine the association between ACEs and resilience among Royal Canadian Mounted Police (RCMP) Cadets; and, (2) determine whether the associ-

ation between ACEs and resilience in Cadets is moderated by emotional regulation.

**Methods:** Data were from the RCMP Study. Participants were RCMP Cadets ( $n = 597$ ; 75.0% male) who completed a Full Assessment before the Cadet Training Program (CTP). Study data were collected via online self-report surveys, including the Brief Resilience Scale (BRS), the Life Events Checklist for the DSM-5, and the Emotion Regulation Questionnaire (ERQ). Childhood adversity included child maltreatment, household challenges, and peer victimization. First, independent sample t-tests were used to assess differences in BRS scores (outcome) as a function of child maltreatment, peer victimization, and household challenges ACEs (predictors), respectively. Second, logistic regression models tested the association between ACEs and BRS scores and the two-way interaction effects of ACEs and ERQ subscale scores on the likelihood of moderate to high resilience after adjusting for sociodemographic characteristics.

**Results:** Independent t-tests indicated no statistically significant differences in mean BRS scores among child maltreatment, peer victimization ( $t(586)=3.92, p>.05$ ) and household challenges ( $t(586)= 3.94, p>.05$ ) binary categories. Logistic regressions indicated statistically significantly reduced odds of reporting moderate or high resilience with a history of child maltreatment, specifically physical abuse (adjusted odds ratio [AOR]=0.26, 95% confidence interval [CI]=0.10 to 0.68,  $p<.01$ ), emotional abuse (AOR=0.28, 95% CI=0.10 to 0.79,  $p<.05$ ), neglect (AOR=0.22, 95% CI=0.09 to 0.55,  $p<.01$ ), exposure to intimate partner violence (AOR=0.18, 95% CI=0.04 to 0.73,  $p<.05$ ), and peer victimization (AOR=0.30, 95% CI=0.12 to 0.76,  $p<.05$ ). The interaction between child maltreatment and ERQ emotional suppression subscale scores (AOR=0.94, 95% CI=0.89 to 0.99,  $p<.05$ ) was statistically significant. The relationship between childhood maltreatment and decreased resilience was particularly pronounced among Cadets with higher emotional suppression scores on the ERQ.

**Conclusions:** Experiencing child maltreatment and peer victimization ACEs can decrease resilience in RCMP Cadets before training. Household challenge ACEs (e.g., divorce, household mental illness) were not associated with resilience. Emotional suppression moderated the association between child maltreatment and resilience. Our results underscore ACEs' important impact on resilience processes and overcoming adversity among RCMP Cadets. Prevention of ACEs remains a public health priority.

### **P132: Can it Work? Psychological first aid as a supportive intervention among police officers**

**Geoffrion, Steve, PhD<sup>1,2</sup>; Arenzon, Valérie, MA<sup>1,2</sup>; Leduc, Marie-Pierre, MA<sup>2</sup>; Genest, Christine, PhD<sup>1,2</sup>**



<sup>1</sup>Université de Montréal; <sup>2</sup>Centre de recherche de l'Institut universitaire en santé mentale de Montréal

**Program/Intervention Description:** Police officers are routinely exposed to traumatic events (e.g., shootings, accidents), which significantly impact their mental health. In response to the increasing rates of posttraumatic stress injuries (PTSI; e.g., depression, anxiety, absenteeism) among Canadian public safety personnel, Quebec's provincial police sought to implement evidence-informed support for their members. While the beneficial outcomes of Psychological First Aid (PFA) have been reported in various contexts, its implementation and potential impact within a police organization remains unexplored. A pilot project was implemented to adapt and proactively deploy a peer-support PFA program among 40 units of Quebec's provincial police. Specifically, the objectives were to evaluate: (1) the demand, (2) the practicality, and (3) the acceptability of PFA in a police organization.

**Evaluation Methods:** A feasibility study was conducted to evaluate the implementation of PFA among Quebec's provincial police force. To do so, 36 police officers participated in semi-structured interviews between October 26th, 2021, and July 23rd, 2022. Participants were comprised of responders ( $n=26$ ), beneficiaries ( $n=4$ ) and managers ( $n=6$ ). Interviews were transcribed, coded, and evaluated according to a thematic analysis.

**Results:** Eleven themes emerged from participants' responses. Results revealed that PFA met both individual and organizational needs and had beneficial consequences within the organization. Specifically, police officers reported that PFA met a long time need in the Quebec police workforce, was easy to access and well fit with the police occupational culture, that peer support facilitated psychological support and that the approach was flexible and useful. All three groups of participants shared similar thematic content.

**Conclusions:** Findings revealed that implementation of a PFA program in a law enforcement agency was feasible and could be accomplished without major issues. Importantly, PFA had beneficial consequences within the organization. Specifically, PFA destigmatized mental health issues and renewed a sense of hope among police personnel. These findings are in line with previous research. Overall, PFA seems to be well-suited for a policing context and should be regarded as a promising solution for organizations seeking a supportive intervention to mitigate PTSIs.

### **P133: Monitoring Firefighters' Post-traumatic Stress Injuries and its Determinants through a Mobile App: A promising approach for tailored interventions**

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**Introduction:** Firefighters face elevated risks of common mental health issues, with distress rates estimated at around 30%, surpassing those of many other occupational groups. While exposure to potentially traumatic events (PTEs) is a well-recognized risk factor, existing research acknowledges the need for a broader perspective encompassing multidimensional factors within the realm of occupational stress. Furthermore, this body of evidence heavily relies on cross-sectional studies. This study adopts an intensive longitudinal approach to assess post-traumatic stress injuries (PTSIs) and its determinants among firefighters.

**Méthodes:** Participants were recruited from 67 fire stations in Montreal, Canada, meeting specific criteria: full-time employment, smartphone ownership, and recent exposure to at least one PTE, or first responder status. Subjects underwent a telephone interview and were directed to use an app to report depressive, post-traumatic, and generalized anxiety symptoms every 2 weeks, along with work-related stressors, social support, and coping styles. Analyses involved 274 participants, distinguishing between those exceeding clinical thresholds in at least one PTSI measure (the "distressed" subgroup) and those deemed "resilient." The duration and onset of PTSI were computed for the distressed group, and linear mixed models were employed to evaluate determinants for each PTSI variable.

**Résultats:** Clinical PTSI was observed in 20.7% of participants, marked by depressive, post-traumatic, and anxiety symptoms, often within the first 4-week reference period. Contextual factors (operational climate, social support, solitude) and individual factors (coping style, solitude and lifetime traumatic events in private life) exhibited more significant impacts on PTSI than professional pressures within the firefighters' work environment.

**Conclusions:** This study reports lower rates of PTSI than previous research, possibly attributable to sample differences. It highlights that reported symptoms often represent a combined and transient layer of distress rather than diagnosable mental disorders. Additionally, determinants analysis underscores the importance of interpersonal relationships and coping mechanisms for mental health prevention interventions within this worker group. The findings carry implications for the development of prevention and support programs for firefighters and similar emergency workers.

### **P136: Adverse Childhood Experiences, Child Maltreatment and Potentially Psychologically Traumatic Events among Cadets entering the Royal Canadian Mounted Police Depot Division Cadet Training Program**

**MacGowan, Lauren, BSc<sup>1</sup>**; *Teckchandani, Taylor A., MSc<sup>2</sup>*; *Jamshidi, Laleh, PhD<sup>6</sup>*; *Caissie, Danielle M., MSc<sup>2,3</sup>*; *Taillieu, Tamara, PhD<sup>1</sup>*; *McCarthy, Julie-Anne, PhD(Cand)<sup>1</sup>*; *Garces Davila, Isabel, PhD(Cand)<sup>1</sup>*; *Lix, Lisa M., PhD<sup>1</sup>*; *Stewart, Sherry H., PhD<sup>4</sup>*; *Sauer-Zavala, Shannon, PhD<sup>5</sup>*; *Sareen, Jitender, MD<sup>1</sup>*; *Krätzig, Gregory P., PhD<sup>2,3</sup>*; *Carleton, R. Nicholas, PhD<sup>2,3</sup>*; *Affi, Tracie O., PhD<sup>1</sup>*

<sup>1</sup>University of Manitoba; <sup>2</sup>University of Regina; <sup>3</sup>Canadian Institute for Public Safety Research and Treatment-Institut Canadien de recherche et de traitement en sécurité publique; <sup>4</sup>Dalhousie University; <sup>5</sup>University of Kentucky (USA); <sup>6</sup>University of Wisconsin-Milwaukee (USA)

**Introduction:** Adverse childhood experiences (ACEs) including child maltreatment, and potentially psychologically traumatic events (PPTes) can have detrimental and long-term impacts on the health and well-being of individuals, families, and communities. More military and police personnel report ACEs histories (47%) than the general population (33%). To date, little is known about ACEs including child maltreatment histories among Royal Canadian Mounted Police (RCMP). We do know RCMP experience more PPTes than the general population, and RCMP have extremely frequent exposures to diverse PPTe types. The present study estimated ACEs prevalence among RCMP Cadets, prevalence of PPTe histories among RCMP cadets with and without ACEs histories, and if having ACEs including child maltreatment histories increased the likelihood of also having PPTe exposures.

**Methods:** Data were drawn from the longitudinal RCMP Study which included data collected from cadets entering the Cadet Training Program (CTP) through online self-report surveys. A sample of RCMP cadets ( $n=597$ ) 19 to 57 years old completed self-reported surveys on ACEs, including child maltreatment, and PPTe histories. Adjusted logistic regression models, which included sex, age, ethnicity, marital status, former province of residence, and education, were used to estimate adjusted odds ratios (AORs) and 95% confidence intervals (95% CIs).

**Results:** Respondents were primarily Caucasian men 19 to 29 years old from Western Canada, single or married/common-law, and had some post-secondary school or a university degree, 4-year College or higher level of education. Prior to the CTP, most RCMP cadet participants (79%) had an ACE history, 36% a child maltreatment history, and 80% experienced a PPTe. Cadets who reported at least one ACE had a higher likelihood of experiencing a PPTe before the CTP (AOR = 1.89, 95% CI = 1.26, 2.84). Cadets with ACE histories, including child maltreatment, were statistically significantly more likely to have experienced 3+ PPTes (AOR = 2.07, 95% CI = 1.27, 3.38), but not 1 or 2 PPTes. Individual ACE types, including child maltreatment, indicated that cadets who experienced childhood neglect were statistically significantly more likely to experience 1+ PPTes in their lifetime (AOR = 2.04, 95% CI = 1.17, 3.56).

**Conclusions:** Results increase our understanding of links between childhood adversity and later PPTes experienced

by RCMP Cadets entering the workforce and may inform key resource developments to support RCMP mental health and well-being throughout their careers.

### **P137: Examining Associations between Adverse Childhood Experiences, Potentially Psychologically Traumatic Events and Mental Health among RCMP Cadets entering the Depot Training Program**

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<sup>1</sup>University of Manitoba; <sup>2</sup>University of Regina; <sup>3</sup>Dalhousie University; <sup>4</sup>University of Kentucky (USA)

**Introduction:** Adverse childhood experiences (ACEs) and potentially psychologically traumatic events (PPTe) are associated with mental health challenges throughout the lifespan. Past research has indicated that as many as half of military and police personnel have experienced ACEs, which is higher than the general population. ACEs, followed by workplace PPTe experiences may increase the risk of experiencing mental health challenges throughout the lifespan. Royal Canadian Mounted Police (RCMP) are also frequently exposed to PPTe; however, little is known about ACEs of RCMP and the combined effect with PPTe on their health and well-being. The study objectives were to: 1) examine whether RCMP cadets in Depot with ACEs (including child maltreatment and household challenge ACEs), compared to those without ACEs were more likely to have depression or anxiety symptoms; and 2) test for cumulative or interaction effects of ACEs and PPTe on depression or anxiety symptoms.

**Methods:** Data were drawn from the Royal RCMP Study – a longitudinal multimodal assessments of RCMP cadets in Depot training. Participants ( $n = 597$ , 19-57 years old, 75% male) completed self-assessments on ACEs and mental health at the beginning of training. Cross-sectional associations were assessed using a series of main effects only and multi-level cumulative and interactive effects logistic regression models, adjusted for gender, age, ethnicity, marital status, province of residence, and education.

**Results:** Many RCMP cadets (35.8%) reported having at least one child maltreatment ACE and most (78.7%) had at least one ACE, including all household challenge and child maltreatment ACEs. Female cadets were more likely than male cadets to report any ACE, child maltreatment ACEs, and anxiety symptoms. Having any ACE was associated with higher odds of anxiety (AOR 2.95; 95% CI 1.02-5.16) and depression (AOR 3.96; 95% CI 1.18-13.32) symptoms. Significant combined effects of child maltreatment ACEs with PPTe (i.e., additive effects) and two-way interactions (i.e., moderation effects) between any

ACE and PPTe and child maltreatment ACEs and PPTe were noted for both anxiety and depression.

**Conclusions:** Many RCMP cadets reported having ACEs including child maltreatment experiences during childhood and these were associated with mental health challenges, especially in combination with PPTe. Given the high prevalence of ACEs among RCMP cadets and the risk of exposure to other PPTe in their public safety roles, providing mental health supports early-on in RCMP training are essential to mitigate potential mental health challenges and promote well-being throughout their lives and careers.

### **P138: Investigating Potentially Morally Injurious Experiences in Paramedics during Covid-19**

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**Introduction:** Since the Covid-19 pandemic, public safety personnel such as paramedics have faced increased exposure to morally and ethically challenging experiences and, subsequently, are at an increased risk of experiencing potentially morally injurious events (PMIEs) and many adverse psychological and behavioural outcomes. PMIEs are events that violate an individual's deeply held values and moral beliefs due to their own actions or by witnessing the actions of others. Although previous research done on public safety personnel and healthcare workers has provided an initial insight into moral injury and the PMIEs commonly faced by frontline workers during the pandemic, it is unclear what unique PMIEs paramedics face in their profession or the impact PMIEs have on paramedic's psychological and behavioural wellbeing.

**Methods:** The primary focus of the study is to identify the nature and type of PMIEs paramedics faced during the Covid-19 pandemic and the associated mental health and behavioural outcomes. Data for this analysis was collected for a broader study seeking to understand the mental health and experiences of Canadian public safety personnel and healthcare workers during Covid-19. Twenty-three ( $N = 23$ ) Canadian paramedics completed virtual semi-structured interviews between June 2021 - June 2023, discussing work-related events they experienced during the Covid-19 pandemic that they felt violated their moral values. Participants also described psychological and behavioural outcomes they faced as a result of these morally injurious events. Transcripts were qualitatively coded using MAXQDA software and analyzed using a thematic approach.

**Results:** The data analysis is still ongoing and will be completed at the time of the presentation. The results of this study will provide valuable insights into the unique PMIEs identified by Canadian paramedics during the Covid-19 pandemic and the profound impact of these events on their overall mental wellbeing and functioning.

**Conclusions:** The study findings contribute to the overall increased understanding of the types of situations paramedics identified as PMIEs, which will aid in building targeted support and resources for paramedics. By identifying PMIEs, organizations can use this research to mitigate these challenges early on and mitigate or reduce exposure to PMIEs where possible. By reducing exposure to PMIEs, organizations will ultimately increase employee retention and implement strategies that promote better mental health of the workers.

### **P139: Measurement-Based Care: The Current State of Technology-based Tools to Improve Outcomes in Mental Health and Addictions Treatment**

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<sup>1</sup>Homewood Health Inc.

**Program/Intervention Description:** Measurement-Based Care (MBC) is the routine, systematic use of validated measures (often self-reported), before, during, and at end of care to help guide clinical decision making. Despite over 20 years of evidence for the efficacy of MBC in mental health care, it has only recently been integrated into treatment, with some of the earliest adopters being the U.S. Department of Veterans Affairs in 2007. MBC has been shown to significantly improve outcomes (i.e. clinical improvement, absence of illness/symptoms) for clients receiving psychotherapy and/or pharmacotherapy for depression, anxiety, and other conditions. MBC can lead to a 42% higher overall improvement in clinical symptoms and 40% lower dropout rates.

**Evaluation Methods:** This presentation will overview the current state of measurement-based care in mental health and addiction settings, underlining the importance of this technology-based tool for healthcare workers, peer support personnel, first responders and military personnel/veterans and overcoming challenges and barriers to implementation. *Touchpoint* is the seamless integration of the data collected in a user-friendly interface implemented at Homewood Health. This interface incorporates a core assessment battery completed by all clients at intake, progress, discharge, and follow-up. MBC allows clinicians and clients to collaboratively monitor response to treatment over time. The data can then be used to improve the clients' treatment plan. Measures for depression, anxiety, trauma, disability, and alcohol and substance use are included in the assessment battery.

**Results:** Preliminary benchmark data show that 75% of clients at Homewood Health have participated in MBC (completed at least one measure); the average therapeutic alliance is 83%; and there is a 66% improvement in scores (first assessment to most recent).

**Conclusions:** With over 20 years of evidence that support its use in mental health, measurement-based care is a transdiagnostic and transtheoretical approach that can be implemented by clinicians across theoretical orientations, training backgrounds, or years of experience, for a wide variety of mental health conditions, treatment settings and modalities. MBC empowers clients by providing them with information about their own treatment progress, building self-compassion and self-efficacy, while enhancing the therapeutic alliance between clinician and client. Measurement-based care is a best practice that should be incorporated into standard policies for health care organizations, especially within mental health and addictions settings. Furthermore, with the increased use of AI technology in healthcare, AI in conjunction with the validated and reliable tools used in MBC has exciting potential for supporting clinical decision making.

#### **P141: Multi-Modal Motion-Assisted Memory Desensitization and Reconsolidation (3MDR) - Layers upon layers.**

**Sevigny, Phillip, PhD<sup>1</sup>; Bright, Katherine, PhD<sup>1</sup>; Beck, Amy, PhD<sup>1</sup>; Brémault-Phillips, Suzette, PhD<sup>1</sup>**

<sup>1</sup>University of Alberta

**Introduction:** Public safety personnel (PSP), including paramedics, firefighters, and police officers, are at heightened risk of developing posttraumatic stress disorder (PTSD) and moral injury (MI) due to the nature of their work. They also may have life experiences and complex life histories that make treatment using conventional trauma-focused therapies (TFTs) less effective. Multi-modal Motion-assisted Memory Desensitization and Reconsolidation therapy (3MDR) is a brief, novel, virtual reality assisted therapy, which targets factors linked to treatment failure. It has demonstrated promise in treating this population and addressing multiple layers of complexity in those with PTSD and related conditions. The aim of this study was to provide a rich description of the process of 3MDR by presenting the cases of 2 PSP who underwent the 3MDR intervention.

**Methods:** This study explored qualitative data derived from a larger mixed-method waitlist control trial testing the effectiveness of 3MDR. Qualitative data was recorded and collected from 3MDR sessions, session debriefings and follow-up interviews up to 3 months post-intervention. Data was thematically-analyzed and resulting themes were reported.

**Results:** Four themes emerged from the data: (1) The Dynamic Nature of Trauma - Uncovering New Layers/Dimensions During the Therapeutic Process ; (2) Shifting Towards a Greater Sense

of Stability and Tranquility; (3) Improving the Quality of Interpersonal Relationships and Family Cohesion; and (4) Laughter as a Symbol of Emotional Healing. The transformative power of 3MDR facilitated personal growth, self-discovery, and empowerment for these individuals who have been affected not only by work-related trauma but complex life histories.

**Conclusions:** These case studies offer insight into how 3MDR can positively impact the lives of participants in initially unexpected ways. 3MDR can serve to address work-related traumas by also illuminating the complex interconnections of compounding personal life events essential to recovery. The therapeutic journey towards reclaiming one's sense of identity and agency in the aftermath of multiple adversities can ultimately lead to greater self-efficacy. Further research is needed to systematically explore the mechanisms underlying 3MDR's effectiveness.

#### **P142: A Comparison of Public Safety Personnel Mental Health and Organization and Social Support in Rural Versus Urban Settings during the COVID-19 Pandemic**

**Sullo, Emily, MMASc<sup>1</sup>; Ritchie, Kimberly, PhD<sup>1,2</sup>; Brown, Andrea, PhD<sup>1</sup>; D'Alessandro-Lowe, Andrea, BSc<sup>1</sup>; Karram, Mauda, BSc<sup>1,3</sup>; Pichtikova, Mina, BSc<sup>1</sup>; Millman, Heather, MA<sup>1</sup>; Schielke, Hygge, PhD<sup>4</sup>; O'Connor, Charlene, MA, MSc<sup>4</sup>; Malain, Ann, PhD<sup>4</sup>; McCabe, Randi, PhD<sup>1,5</sup>; Heber, Alexandra, MD<sup>6</sup>; Remers, Shannon, MSc<sup>1</sup>; McKinnon, Margaret, PhD<sup>1,5,7</sup>**

<sup>1</sup>McMaster University; <sup>2</sup>Trent University; <sup>3</sup>University of Toronto; <sup>4</sup>Homewood Health Centre; <sup>5</sup>St. Joseph's Healthcare Hamilton; <sup>6</sup>Veterans Affairs Canada; <sup>7</sup>Homewood Research Institute

**Introduction:** Public safety personnel (PSP; i.e., firefighters, police officers, correctional officers, dispatchers, paramedics, etc.) face inherent occupational stressors, which increase their risk of mental health difficulties, including post-traumatic stress injury or disorder, substance use, depression, and anxiety. The COVID-19 pandemic exacerbated these challenges and contributed to worsening mental health and well-being of Canadian PSP. Despite growing research on COVID-19's impact, there is little research examining the influence of geographic location on PSP mental health and perception of organization and social support, specifically between rural and urban personnel. Previous research has indicated no significant difference in the mental health of rural versus urban PSP; however, severe shortages in staffing and resources both during and after the COVID-19 pandemic suggest the possibility of poorer mental health outcomes in rural locations. Furthermore, PSP in rural areas tend to have access to fewer resources, including organization and social support, which was worsened by COVID-19 and can contribute to poorer mental health outcomes. As such, the purpose of this study is to compare mental health scores and perception of organization and social support among rural and urban PSP during the pandemic.



**Methods:** As part of a broader project on PSP mental health during COVID-19, we invited PSP to participate in an online survey using REDCap. Demographic questions included whether respondents lived in rural or urban areas, and PSP completed numerous self-reported mental health assessments and measures of perceived organization and social support. Quantitative analyses will be conducted to determine if there are significant differences in mental health scores (e.g., PTSD, depression, moral injury, anxiety, and substance use) and perceptions of support between urban and rural PSP during the pandemic.

**Results:** This research will give important information about challenges in rural locations (i.e., severe resource shortages) and contributed to poorer mental health outcomes. Data analysis is ongoing but will be completed in time for dissemination at the conference.

**Conclusions:** This study will provide valuable insight on whether COVID-19 impacted PSP differently based on rural or urban work settings. A better understanding of these potential influencing factors can inform future research priorities and resource allocation, potentially directing more support to rural PSP if disparities in support are identified.

## PRIMARILY PHYSICAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1B01: “Shoulder to Shoulder”: North American Firefighters’ Perspectives on Navigating Interventions and Healthcare Choices for Work-Related Shoulder Disorders

*Osifeso, Temitope, MSc<sup>1</sup>; MacDermid, Joy, PhD<sup>1,2</sup>; Berinyuy, Dorala, MSc<sup>1</sup>; Parikh, Pulak, PhD<sup>1</sup>; Faber, Kenneth, MD<sup>1,2</sup>*

<sup>1</sup>Western University; <sup>2</sup>Roth McFarlane Hand and Upper Limb Centre

**Introduction:** The unpredictable nature of firefighting, characterized by lifting and carrying heavy equipment, forceful upper body movements in confined spaces, and exposure to extreme conditions, predisposes firefighters (FFs) to a range of work-related shoulder disorders (WSDs). Specifically, shoulder disorders can lead to an inability to perform activities of daily living, leading to significant economic burdens for the affected individual and their families. The unique occupational demand of firefighting underscores the need for targeted intervention and occupational health programs tailored to the demands of firefighting. Therefore, the objective of our study was to explore the: 1) management strategies that FFs employ after WSDs? 2) perceived needs and preferences of FFs with WSDs in relation to their occupational health?

**Methods:** Using an interpretive descriptive methodology, we interviewed 12 firefighters (males, 8 and females, 4) between 26 - 63 years of age who experienced WSDs in their career. One-on-one interviews were conducted using online video conference software and were transcribed verbatim. The analysis took place concurrently with data collection, so the amount of data increased consecutively. The sample size was evaluated on an ongoing basis to identify when sufficient density of the data or data adequacy was achieved that is capable of describing the complexities of our objective. All data were anonymized after the semi-structured interviews and transferred to the NVivo 14 software programme. Thematic analysis and inductive coding were used to identify, analyze, and describe patterns or themes using the interpretive descriptive approach. Specifically, we followed Braun and Clarke’s six phases of thematic analysis (Braun & Clarke, 2006).

**Results:** There were four themes identified by firefighters as management strategies after WSDs: 1) Clinical diagnostic tools serve as the initial step in determining the appropriate management approach; 2) Timely medical intervention plays a crucial role in the successful management of shoulder injuries; 3) Social support can enhance recovery from shoulder injuries. 4) Adopting personal coping techniques proved beneficial at the early stages of the shoulder injury. Further, two themes were identified as needs and preferences in relation to their occupational health: 5) Formal and targeted training and exercise programs minimize shoulder injuries; 6) Mandatory health and wellness monitoring program prevents shoulder injury or re-injury

**Conclusions:** The unique occupational demands of firefighting necessitate a multifaceted and holistic approach to shoulder injury management and prevention. This approach encourages the development of tailored intervention programs that address the specific challenges and perceived needs of firefighters with WSDs.

#### 5B01: CounterFlow Gauze: Next-Generation Hemostatic Gauze

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<sup>1</sup>Canadian Blood Services Centre for Innovation; <sup>2</sup>University of Toronto; <sup>3</sup>St. Michael’s Hospital Toronto; <sup>4</sup>Defence Research and Development Canada; <sup>5</sup>University of British Columbia; <sup>6</sup>Versiti Blood Research Institute

**Introduction:** Uncontrolled hemorrhage, responsible for 91% of preventable deaths in combat-trauma, with 19% in anatomical junctional regions, poses a significant challenge. As a potential solution, we have developed *CounterFlow* gauze, which incorporates tranexamic acid (TXA), calcium carbonate (CaCO<sub>3</sub>), and thrombin. Upon contact with blood, the acid-base reaction between TXA and CaCO<sub>3</sub> generates CO<sub>2</sub>,

which propels the hemostatic agents deep into the wound. This study aims to test the efficacy and usability of *CounterFlow* gauze by Canadian Armed Forces medics.

**Methods:** Our swine hemorrhage models ( $n = 20$ ) were freely bled for 15 seconds, then packed by a medic. Percent survival, blood loss, vitals, plasma TXA, coagulation, and blood-gas were assessed every 10-15 minutes for 3 hours.

**Results:** All 10 animals treated with *CounterFlow* gauze survived, compared to 9 out of 10 in the *Combat gauze* group. While not statistically significant, *CounterFlow* gauze showed reduced blood loss, and improved mean arterial pressure and heart rate compared to *Combat* gauze. Coagulation, acid-base, oximetry, and electrolyte-metabolite parameters showed no differences between gauzes. Within 30 minutes of application of *CounterFlow* gauze, systemic TXA concentrations ( $10.92 \pm 2.92 \mu\text{g/mL}$ ) were found to be comparable to 1g IV injection and remained elevated at 3-hour endpoint.

**Conclusions:** *CounterFlow* gauze effectively controls hemorrhage, delivers TXA systemically, and provides safe access to hemostatic agents in prehospital settings. Medics showed preference for *CounterFlow* gauze for its enhanced hemostatic properties. Future studies will assess the efficacy of *CounterFlow* gauze in the presence of hypothermia and evaluate thrombosis risk for regulatory approval.

## Poster Presentations

### P135: Exploring Canadian Career Firefighters' Understanding of the Return-to-Work Process after Musculoskeletal Injuries

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**Introduction:** Firefighters perform dangerous and physically demanding work, increasing their risk of musculoskeletal injuries that can lead to work absences. Return-to-work procedures can help firefighters return-to-work sooner and safely. The purpose of this study was to explore what firefighters understand about return-to-work procedures in their workplaces, and what firefighters believe the facilitators and barriers to return-to-work are.

**Methods:** Thirty-eight Canadian career firefighters were recruited for semi-structured interviews. Qualitative descriptive methods were used to analyze the transcripts. Two researchers performed the inductive coding and thematic analysis.

**Results:** Five themes were identified: 1. Variation in the return-to-work process knowledge among firefighters based on their experiences; 2. Accessible medical resources and treatments

to support injury recovery; 3. Light duties must be meaningful and suitable; 4. Pressures to return-to-work too soon may lead to negative consequences; 5. Heavy physical demands of firefighting may become a barrier for return-to-work. 'Factors affecting RTW depended on personal experiences and context' was the overarching theme identified, as many reported facilitators for return-to-work were also reported as barriers in different contexts. There was a variation in the experiences and understanding of return-to-work.

**Conclusions:** There is a lack of knowledge of the return-to-work processes. Firefighters require access to clear return-to-work policies and procedures and treatments that are targeted to firefighting duties to support recovery from injuries and regain physical abilities after an injury. Firefighters must be able to perform all essential duties before returning to firefighting work, as returning to work too soon can lead to further injury.

## MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1B03: Mental Health in Public Safety Personnel with Workplace Injuries Requiring Surgery: A Longitudinal Population-wide Administrative Data Study

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<sup>1</sup>University of Manitoba; <sup>2</sup>Australian National University (Australia); <sup>3</sup>National Centre for Epidemiology and Population Health (Australia); <sup>4</sup>Manitoba Centre for Health Policy; <sup>5</sup>Queen's University; <sup>6</sup>Health Sciences Centre Burn Unit

**Introduction:** Public safety personnel (PSP) are responsible for ensuring the safety and security of communities, often putting their own lives and well-being at risk by performing dangerous and demanding work. As a result, these workers are particularly vulnerable to workplace-related physical and mental traumatic injuries. Research is needed to understand the mental health of PSP following traumatic physical injury to inform effective prevention programs and interventions. The objective of this study was to investigate if PSP with traumatic physical workplace injuries requiring surgery with anesthetic have higher post-injury rates of mental disorders compared to the general population with similar non-workplace injuries.

**Methods:** Design: Retrospective longitudinal cohort study.

Setting: Population-based study using linked anonymized administrative data for PSP and the general population in Manitoba, Canada.

**Participants:** This study compared two groups hospitalized for a traumatic physical injury requiring surgery with anesthetic between January 1, 2002 and December 31, 2018: 1) PSP (n= 293) matched 1:5 on sex, age, geographic region and surgical procedure code with 2) individuals in the general population (n=1198).

**Primary and secondary outcomes and measures:** As planned in the study protocol, mental disorders including anxiety, depression and substance use were measured in the cohorts two years pre- and post-injury.

**Results:** This study found an elevated risk of depression in PSP compared to the general population in the two years post-injury, adjusting for pre-injury mental health (RR, 1.49; 95%CI, 1.02 – 2.17; p<.0001).

**Conclusions:** Our findings indicate that, compared to a matched cohort, PSP have an increased rate of depression following a traumatic physical workplace injury. PSP have a unique mental health trajectory following workplace injury that should be considered when developing rehabilitation strategies for this important population.

## Poster Presentations

### P134: An Environmental Scan of Available Datasources and Resources to Support Royal Canadian Mounted Police Veterans

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**Introduction:** Current research suggests that the transition to retirement is a critical experience for Veterans, who may experience significant challenges during their transition. Most service to civilian transition research has focused on the transition of Canadian Armed Forces military personnel, while little research has focused on the transition of Royal Canadian Military Police (RCMP) Veterans. After retiring from service, RCMP Veterans fall under the mandate of Veteran Affairs Canada and data on RCMP Veterans can become blended with CAF Veterans. In order to understand the unique needs of RCMP Veterans and the impact of service and retirement on their health and well-being, it is critical for data to be available that looks specifically at RCMP Veterans independent of military Veterans.

**Methods:** To address with research gap, we will conduct an environmental scan to identify any data sources that include RCMP Veteran data. Our scan will include a systematic search strategy developed in collaboration with a health science librarian. In addition, we will consult with subject matter experts to target our search strategy and ensure it is inclusive

of any known datasets or organizations to contact. Through an online search, we will broadly explore any available and accessible datasets that include RCMP specific data. Following an online search, the research team will contact relevant organizations, including Veterans Affairs Canada, the RCMP, the National Police Foundation and any others identified in the online search directly.

**Results:** The results of this project are pending and anticipated to be complete by October 2024. This project will explore data sources available to understand the needs of RCMP Veterans and the impact of retirement on their health and well-being. Through this scan, we can learn what datasets are available that include RCMP data, what data has been captured in these data sets, where the data sets are located, and provide information on how to access the datasets. Depending on the findings of the scan, recommendations may be made on capturing RCMP Veteran data (i.e. an RCMP Veteran identifier) and gaps in the information captured in the datasets.

**Conclusions:** Considering the limited research on RCMP Veterans, this project will source datasets that can be used to explore the unique needs, challenges, and impact of service and transition on RCMP Veterans. These datasets, and recommendations from the environmental scan, will be critical to provide a foundation for future research to build upon to improve the health and well-being of RCMP Veterans.

### P143: Mapping the Landscape: An environmental scan of Canadian programs and services for Public Safety Personnel affected by concussions

*Tam-Seto, Linna, PhD<sup>1</sup>; Mark, Verne Rensi, BA<sup>1</sup>; Mahmood, Amina, BHS<sup>1</sup>; Reid, Nicholas, PhD<sup>1</sup>*

<sup>1</sup>University of Toronto

**Introduction:** Concussions among public safety personnel (PSP) pose significant challenges, impacting their health, safety, and operational readiness. Despite growing awareness, gaps remain in understanding the landscape of available programs and services for concussion management in Canada. The current study in progress is an environmental scan aimed at mapping the existing programs and services for Canadian PSP and their families affected by concussions.

**Methods:** Using methods outlined by Choo (2001), an environmental scan is being conducted to identify programs and services addressing concussion management for Canadian public safety personnel. Given the objective of the study, a conditioned viewing approach is being taken to search and identify programs and services found on the internet. Inclusion criteria focused on Canadian-based on-line resources and information specifically targeting PSP and their families. Data will be organized to group relevant programs and services by type, target population, and geographic location. A strength-weakness-opportunities-threat (SWOT) analysis will be completed.

**Results:** A broad internet search of potentially relevant Canadian sources identified 283 unique websites, however, preliminary analysis of the included websites has revealed a very limited number of programs and services aimed specifically at supporting PSP and their families. A range of organizations have been identified across Canada, however not specific to PSP and families, and include educational initiatives, clinical services, rehabilitation programs, and peer support networks. There are some exemplar organizations, however, there are significant gaps in services, particularly in rural and remote areas. These findings are important as there is potential for adaptation for PSP. Challenges in accessing specialized, culturally competent care, inconsistent policies, and limited resources are likely common themes that will be identified across jurisdictions. Moreover, the variability in program availability and quality will likely highlight the need for standardized guidelines and enhanced collaboration among stakeholders.

**Conclusions:** The environmental scan underscores the complexity of concussion management for Canadian PSP and their families. The scan will highlight strengths and weaknesses in the current landscape while pointing to future opportunities to better support PSP and their families. While progress has been made in raising awareness and expanding resources, disparities persist in access and quality of care. Moving forward, efforts should focus on improving coordination among stakeholders, standardizing protocols, and addressing the unique needs of diverse PSP populations. By leveraging existing strengths and addressing identified gaps, organizations can enhance support for PSP affected by concussions, ultimately improving their health outcomes and operational readiness.



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## HEALTH POLICY

### Podium Presentations

#### 2C02: Enhancing Military Medical Policy through Evidence: A Comprehensive Evaluation of Canadian Forces Health Services' Response to the COVID-19 Emergency

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<sup>1</sup>Canadian Armed Forces

**Introduction:** This report aimed to assess the performance of CFHS in providing in-garrison care, supporting deployments, and collaborating with civil authorities. It employed a standardized methodology and qualitative rigour to evaluate the relevance of policies, best practices, and related guidelines, particularly in addressing emerging global health threats.

**Methods:** CFHS's response to the pandemic was reviewed across four criteria: effectiveness, efficiency, governance, and incorporating GBA+ analysis. The evaluation period was from March 2020 to September 2021, focusing on three activity Clusters: (I) institutional health services supporting operational capabilities; (II) logistics of the response (i.e., in-garrison care); and (III) support to the Canadian civilian healthcare system.

The methodology included gathering insights from patient and provider focus groups (n=206 participants), visiting five representative base clinics, completing semi-structured interviews of key informants (n=118), and analyzing pertinent documents (n=151). The investigation yielded several findings (n=28), leading to a comprehensive set of recommendations (n=22) aimed at sustaining, improving, or discarding elements and ideas to achieve a better response.

**Results:** CFHS ensured a medically ready force that supported operational effectiveness and maintained readiness for Op LASER-related taskings. In-garrison health services effectively implemented public health measures for infection control, ensuring the safe continuity of essential services.

Several factors negatively influenced the response efficiency resulting in a greater organizational effort required to achieve successful outcomes. These included significant gaps in planning and preparedness, notably the absence of a detailed, up-to-date medical CONPLAN; business continuity plans that, for success, relied heavily on technology that was, in some cases, almost non-existent; and pre-existing challenges concerning human and other resources. The findings highlighted deficiencies in governance structures and processes that hindered CFHS's ability to fulfill required tasks efficiently.

Noteworthy was the profoundly different response experience between medical and dental services. The onus and scope for essential services were more complex for the former, particularly during the initial six months of the pandemic.

**Conclusions:** Supported by the findings, the 22 recommendations encompass a range of strategic, operational, and logistical aspects, including the effectiveness of pre-existing plans and their adaptation in the face of the pandemic, the efficiency of resource allocation and utilization, compliance with established policies and directives, governance structures to ensure proper decision-making and accountability, and the integration of gender and diversity considerations. They collectively aim to assess and enhance the CFHS's response to pandemic-related emergencies.

## HEALTH SERVICES

### Podium Presentations

#### 2C01: Optimizing Military Health Care: Leveraging Policy Design Thinking for Strategic Solutions - A Montfort-Carling Pharmacy Unit Case Study

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<sup>1</sup>Department of National Defense; <sup>2</sup>University of Queensland (Australia); <sup>3</sup>State University of Port-au-Prince (Haiti)

**Program/Intervention Description:** The Canadian Forces Health Services (CFHS) system is characterized by a multitude of complex and competing issues that frequently pose challenges in delivering high quality health services across the Canadian Armed Forces (CAF). Institutional efforts to evaluate these issues and implement strategies for enduring change often fall short of achieving the intended outcomes. Furthermore, contextual factors such as leadership turnover, the decision velocity cycle, and the retention of institutional knowledge complicate implementation and the continuity of policies. There is a pressing need for a comprehensive and structured assessment of the healthcare unit's business portfolio. Such an assessment would facilitate a nuanced understanding of the complex dynamics of the health system and the overarching policies that regulate them, thereby guiding the development and implementation of strategies for constructive change.

**Evaluation Methods:** This evaluation project employed the Walt and Gilson health policy analysis framework to examine the business portfolios of the Canadian Forces Health Services Centre (Ottawa) (CF H Svcs C (O)) Carling Campus and Montfort pharmacy sections. The analysis focused on four interconnected components—context, actors, content, and process—alongside their dynamic interactions, which are vital for the formulation and implementation of health policies. By analyzing these elements, the research aimed to explain the factors influencing policy adoption, success, and failure,

thereby providing insights into the effectiveness of the current health policy strategies within these units.

**Results:** This health policy analysis framework yielded a structured and systematic methodology for addressing the challenges faced by the CF H Svcs C (O) Carling Campus and Montfort pharmacy sections at both the clinical and CFHS headquarters level. The analysis facilitated a methodological approach that effectively identifies problems, analyzes and implements solutions within the complex regulatory environment of military health care. This comprehensive examination not only highlighted the critical factors influencing policy effectiveness, but also provided a roadmap for strategic decision-making and policy implementation.

**Conclusions:** This case study emphasizes the importance of structured analysis in military healthcare to enhance services. Using a policy analysis framework, we thoroughly examined the challenges within CF H Svcs and delivered strategic policy insights. The results improve military healthcare strategies and offer new perspectives on policy design thinking in the military healthcare sector specifically within CFHS. It provides actionable insights and an adaptable framework for broader CFHS application, potentially revolutionizing how evaluations and inspections are conducted throughout the organization.

#### **2C04: Cervical Cancer Screening Compliance among Canadian Armed Forces Regular Force Personnel, 2014-2022**

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<sup>1</sup>Department of National Defence

**Introduction:** Cervical cancer is a significant public health concern, but it is 100% preventable and curable if detected early. However, the Canadian Armed Forces (CAF) lacks a population-level cervical cancer prevention program, relying on screening initiated by patients or individual clinicians. Currently, there is no established surveillance system for monitoring cervical cancer screening rates in the CAF. This study aimed to fill this gap by estimating participation rates in cervical cancer screening over time among Regular Force females, utilizing data from the Canadian Forces Health, Evaluation and Reporting Outcomes (CFHERO) system.

**Methods:** A population-based retrospective cohort design was used to include all Regular Force females aged 25-60 years who qualified for routine Pap screening test and had at least three consecutive years of service during 2012-2022. Three extracts from the electronic medical record (EMR) were linked using the unique service number. Eligible females were identified using the Master Patient Index extract and Clinical Diagnoses extract. A case finding algorithm for Papanicolaou (Pap) test was developed from the Scanned Documents extract. The percentage of eligible females who completed at

least one Pap test in the past three-year period was calculated for each year from 2014 to 2022. Results were further stratified by age, rank, command, base/wing, and care delivery unit. Age-standardized and hysterectomy-corrected participation rates were estimated for each year. In addition, sensitivity and specificity were calculated to validate the performance of the Pap test algorithm through medical chart review.

**Results:** The crude rate of cervical cancer screening compliance among Regular Force females declined over time, dropping from 76.3% in 2014 to 45.5% in 2022. Particularly, females of older age, senior rank, and those not affiliated with the Army, Navy, and Air Force commands showed lower compliance rate, compared to their counterparts. Cervical cancer screening compliance varied across bases/wings and care delivery units; however, the decreasing trend was ubiquitous. Age-standardized and hysterectomy-corrected participation rates also showed a similar pattern. Data validation of the algorithm to identify a Pap test showed a sensitivity of 87.1% and a specificity of 99.2%.

**Conclusions:** Study findings suggest that cervical cancer screening compliance is declining among female Regular Force personnel from 2014 to 2022, especially among older females and those not under Army, Navy, and Air Force command. Further investigation is needed to fully understand the underlying factors associated with this decline to ensure optimal cervical cancer screening practices in the CAF.

#### **7D03: Enhancing Capacity of Community-based Sexual Violence Centres to respond to Canadian Armed Forces/Department of National Defence Survivors of Military Sexual Trauma**

*Orchard Young, Shannon, MSc<sup>1</sup>; Lanthier, Stephanie, PhD (Cand)<sup>1</sup>; Whitmore, Erin, PhD<sup>1</sup>*

<sup>1</sup>Ending Violence Association of Canada

**Introduction:** There is an important role for Community-Based Sexual Assault Centres (SACs) in serving members of the Canadian Armed Forces (CAF)/Department of Defence (DnD) community who have experienced Military Sexual Trauma (MST). Due to the often-traumatic nature of their experience, some survivors may choose to seek civilian services for MST. While SACs hold specialized knowledge about sexual violence, they do not always hold specialized knowledge of the unique elements and cultural context of MST. To build capacity, the provision of specialized training in MST is essential for SACs to respond appropriately to the distinct needs of these survivors. In consultation with CAF/DND partners, key community-based sexual violence advocates, and MST survivors, this research and education project will develop an evidence-informed, cultural competence (CC) training to educate SACs on better responding to MST.

**Methods:** We undertook a multi-method approach to data collection including a needs assessment survey of SACs, key informant interviews and a literature review on best practices for developing cultural competence training within the context of MST. The research team and the working group employed a modified Delphi method for community-based settings to enable consensus on the inclusion/exclusion material for the CC educational training (Brady, 2015; Dalkey & Helmer, 1963).

**Results:** Results are still pending as this is an ongoing project. Preliminary results show that despite limited military knowledge and lack of specialized training, SACs have a desire to increase knowledge and capacity to ensure they effectively meet the needs of survivors. The data collection steps, including the development of an expert working group and creation of a survivor-lead advisory panel are an integral part of creating a training program geared towards improving SACs military cultural competency and addressing barriers in providing care to survivors of MST in the community.

**Conclusions:** There is a need for survivors of MST to have timely access to culturally competent civilian services (Silins, 2021). SACs play an important role in care provision for MST survivors in the community. While they provide a space outside of the structure of the military to support survivors, many lack a level of the cultural competence needed to effectively support this specialized community. The creation of a CC working group made up of MST advocates and service providers, guided by SACs feedback and participation, and supported by key military leadership, is an integral step towards developing a cultural competency training course.

## Poster Presentations

### P110: Reasons for Primary Care Visits by Canadian Armed Forces Personnel: A Sex-Based Analysis of 2023 Diagnostic Data from the Canadian Forces Health Evaluations and Record Outcomes System

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<sup>1</sup>Department of National Defence

**Introduction:** The electronic medical record (EMR) system used by Canadian Forces Health Services contains a wealth of information on health care utilization and has great potential to contribute to population health surveillance of the Canadian Armed Forces (CAF). To date, surveillance on reasons for primary care encounter visits had not been initiated in the CAF, whereas it is routinely conducted. This study represents the inaugural iteration of surveillance on this topic, describing primary care service utilization by type of diagnoses documented during every medical encounter.

**Methods:** The Canadian Forces Health Evaluations and Record Outcomes (CFHERO) population health surveillance system

was used to combine DND administrative data with EMR data to describe all documented clinical diagnoses during every medical encounter from 01 January to 31 December 2023. Reasons for medical encounters were described by the 22 International Classification of Diseases, 10th revision (ICD-10) chapters. We assessed demographic and occupational covariates associated with different types of diagnoses using chi-squared tests.

**Results:** A total of 59,939 unique CAF personnel (18.9% female) accessed primary care during this 1-year study period. A total of 418,655 ICD-10 codes were recorded during primary care encounters. Females had more ICD-10 codes recorded compared to males ( $p < 0.001$ ). An average of 9.1 ICD-10 codes were captured in 2023 per female (SD 8.7; median=7) and 6.5 per male (SD 7.3; median=4). More than one quarter (26.4%) of all diagnoses (females, 28.2%; males, 25.8%;  $p < 0.001$ ) were Chapter 21 codes, "Factors influencing health status and contact with health services". Injury-related codes (Chapters 13 and 19) accounted for 17.0% of all diagnoses among females and 20.5% ( $p < 0.001$ ) among males. The next most common chapter was Chapter 5, "Mental and behavioural disorders" (females, 18.4%; males, 17.5%;  $p < 0.001$ ). Specific diagnostic codes within each chapter will be further described by demographic and occupational characteristics in the presentation.

**Conclusions:** Population-based primary care data have not been described previously for the CAF population. The majority of primary care encounters are related to injury and mental health, reinforcing these topics as priority for resource allocation for public health and preventive measures. One in four encounters were captured as being for administrative purposes, indicating a substantial administrative demand on CDUs. Overall, there was a disparity by sex, where females received more diagnoses per individual than males, except in the case of injury diagnoses.

## PRIMARILY MENTAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1D01: Rescripting Trauma in Psychotherapy: A Systematic Review Assessing Clinical Effectiveness of Accelerated Resolution Therapy as a Treatment for Posttraumatic Stress Disorder

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<sup>1</sup>Department of National Defence

**Introduction:** Accelerated Resolution Therapy (ART) is a trauma-focused psychotherapy which has shown promise as a treatment for Posttraumatic Stress Disorder (PTSD). Given that ART generally requires fewer treatment sessions than these treatments, the Canadian military is interested in determining



whether the early results are generalizable to members of the Canadian Armed Forces. As a first step, a review of the literature is needed to provide a comprehensive assessment of the latest clinical evidence on ART and its effectiveness for treatment of PTSD. The primary objective of this study is to conduct a systematic review to derive the quantitative consensus of clinical effectiveness of ART.

**Methods:** Relevant literature for this systematic review was obtained through comprehensive searches of indexes (MEDLINE, PsychINFO, Embase) and grey literature (dissertations, trial registries, author search) guided by the Cochrane Collaboration handbook. We included all relevant literature published between 2013 and 2023 that uses ART for treatment of PTSD regardless of study design. All identified studies were independently screened by at least two reviewers. To summarize effect sizes from different studies, we computed a standardized mean difference of each study by calculating the ratio of the mean difference divided by its standard deviation.

**Results:** Between 2013 and 2023, initial search identified 104 publications meeting the inclusion criteria. These included 51 from indexed databases, 18 from trial registries, and another 35 from various sources such as reports/theses, author search etc. After removal of duplicates and exclusions applied (e.g., editorials), 16 studies were retained for systematic review. Most of these studies used the PCL (PTSD Checklist) to measure changes in PTSD status from baseline. All studies showed some improvements in PTSD status after receiving ART treatment. Of these, the 3 most rigorous studies which were designed using randomized assignment of ART treatment compared to a controlled group, showed a mean reduction in PCL score between 15 to 25 points. However, important limitations need to be taken into consideration. Studies to date rely on self-reported PTSD status, not confirmed diagnoses. Furthermore, comparison in the RCTs conducted to date used wait-list controls and not a head-to-head comparison with first-line psychotherapy.

**Conclusions:** In summary, while early studies do provide some evidence suggesting clinical effectiveness, higher quality studies powered to compare ART against other first-line psychotherapies are needed to reach more definitive conclusions.

## 2D04: Lived Expertise Engagement within a Co-Principal Investigator Research Model: Part 2

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<sup>1</sup>The Atlas Institute; <sup>2</sup>Blueprint - Military and First Responder Resiliency Projects

**Brief Description:** A novel engagement model, which includes lived expertise as co-principal investigators, has been piloted within a qualitative research study exploring how people serving in specialized military units make sense of the personal impacts of service, and negotiate belonging, status,

group and personal resilience. The lived expertise inclusion not only enhances the relevance and applicability of the research but also ensures that the voices and insights of those directly affected by the concepts being studied are central to the process, within a leadership role. Engagement with lived expertise was exercised in a multitude of ways including the conception of the research question, the creation of the lived expertise advisory group, the completion of the protocol, the vetting of the interview guide and the development and execution of the recruitment strategy. This presentation will showcase the strengths, opportunities, facilitators and barriers to employing a research approach that embeds lived expertise within the research leadership team.

**Patient Population:** The target audience for the resources are currently serving military members and Veterans as well as researchers who want to learn about engagement with lived experience, employing a co-principal investigator approach. As this study explores military experience of resilience, the lived expertise co-principal investigator has served 19 years in the Canadian Armed Forces, retiring as a Warrant Officer.

**Results:** This co-principal investigator model of engagement not only amplifies the relevance and validity of the research but also underscores the central importance of the viewpoints and insights of individuals directly affected by, and knowledgeable about military and Veteran lifestyle and service. Furthermore, a lived experience co-principal investigator model fosters greater empathy, authenticity and cultural sensitivity within the research team, ultimately leading to more comprehensive and meaningful outcomes that have been co-discovered by members of the community, creating more potential to drive positive change in society.

**Conclusions:** Along with its challenges, barriers and opportunities, having a lived expertise co-principal investigator in research enriches the study by offering firsthand insights and perspectives. Their engagement ensures that the research remains relevant, empathetic and culturally sensitive, fostering meaningful outcomes and potential community impact.

## 3A02: The Mental Health, Wellbeing, and Help-Seeking Behaviour of Women Serving in the British Regular Armed Forces

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<sup>1</sup>King's College London (UK)

**Introduction:** Operational Mental Health Needs Evaluation Survey(OMHNE) are an ongoing series of cross-sectional surveys used by the British Armed Forces. They measure the mental health and mental health support requirements of military personnel, on deployment and in barracks. The results of OMHNEs are used to inform high level policy making decisions and to fill gaps in the literature, about the prevailing mental

health issues, workplace demands and general wellbeing of the force. Women make up 11.5% (N=16,450) of the Regular Armed Forces and this is the first time the data from individual OMHNE studies has been aggregated to analyse the self-reported mental health, wellbeing and help-seeking behaviour of female service personnel.

**Methods:** This is a secondary data analysis study. OMHNE data is collected through an electronic self-reporting survey, using validated methods, and all members of the unit completing the OMHNE are invited to participate. The study aggregated the data (N=9560), from 15 OMHNEs conducted on regular armed forces, across all three services, Navy (N=992), Army (N=7482), RAF (N=1086). Age ranged from 18 to 55 and 17% self-identified as being female (N=1621). The female data is being analysed to evaluate the prevalence of mental disorders (anxiety, depression, PTSD, alcohol misuse, suicide and self-harm behaviours), overall wellbeing (home stressors, general health, work environment, burnout, sleep and relationships) and help-seeking behaviours.

**Results:** Preliminary findings show caseness of common mental disorders in serving females is comparable with expectations based on published data on the health of the British Armed Forces, the academic literature and national trends in the civilian population. The final outcomes will demonstrate the proportion of this group not seeking help, those who are seeking help outside of the military health framework, the barriers to accessing care and identify help-seeking beliefs and behaviours. These outcomes will be compared against the prevalence in men serving in the military, and men and women in the civilian population to identify military and gender specific differences.

**Conclusions:** This study demonstrates the mental health and wellbeing needs of women serving in the British Armed Forces. It provides new insights into those serving who screen positive for a mental health disorder, but do not seek help through defence healthcare. It provides novel evidence on the impact of the pressures of workplace demands, relationships and home stressors on service women. This research will be disseminated to inform policy to improve access to appropriate interventions and improve help-seeking behaviour in this group.

### **3B01: A Brief Introduction to Measurement-based Care: Definitions, evidence, implementation, and caveats**

*Fikretoglu, Deniz, PhD<sup>1</sup>*

<sup>1</sup>Defense Research and Development Canada - Toronto

**Brief Description:** Measurement based care (MBC) is an approach to mental health treatment that routinely collects patient reported outcome (PRO) measures to track treatment progress for patients and uses such data to identify cases

that are not-on-track (NOT) to quickly refine the treatment approach as needed. The key components of MBC include: (1) a routinely administered symptom, outcome, or process measure, (2) practitioner review of data, (3) patient review of data, and (4) collaborative reevaluation of the treatment plan informed by data. Unfortunately, the uptake of MBC across military, veteran, and civilian mental health care systems has been less than optimal. A purposive review of the scientific literature on MBC for mental health treatment was conducted, focusing on definitions, evidence for efficacy, and implementation in real world clinical settings.

**Patient Population:** This abstract is geared towards military, veteran, and civilian patients.

**Results:** The scientific literature review revealed that MBC is referred to in as many as sixteen different ways, with many definitions frequently omitting although implying two key components: patient review of data and collaborative reevaluation of the treatment plan informed by data. Across different types of reviews, MBC has been shown to: improve patient outcomes, decrease costs, and outperform usual care. However, the overall methodological quality of the MBC literature is low and there is emerging literature that suggests it may be contraindicated in some patient populations. Implementation of MBC remains challenging across diverse health care settings, with as little as 5% of clinicians using MBC according to its empirically informed schedule. A multitude of factors at the patient, clinic, and healthcare system levels as well as at the level of intervention and implementation need to be considered to improve MBC implementation outcomes.

**Conclusions:** MBC is an evidence-based approach to mental health treatment with clear benefits to patients and healthcare systems. However, MBC is underspecified and is challenging to implement. A large number of implementation models, theories and frameworks, as well as empirically defined implementation strategies exist and should be considered in order to reap the full benefits of MBC. Future MBC studies should aim to improve their methodological quality by considering potential confounding due to heterogeneity across patients and providers and should consider using an independent instrument to corroborate patient progress.

### **3B02: CROMIS and The Canadian Armed Forces Experience**

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**Brief Description:** Over the past 25 years, the Canadian Armed Forces (CAF) have built a comprehensive specialty outpatient mental health treatment system. Improving the effectiveness and efficiency of this system is a key priority of the Surgeon General's Mental Health Strategy. Successful implementation of a measurement-based care (MBC) system

within the clinical mental health program is an integral component of this objective. However, adoption of the CAF MBC solution known as CROMIS has fallen short of desired targets after a decade. The history of the implementation process will be presented together with some potential barriers to adoption which have been identified as well as recommendation to guide future implementation efforts.

**Patient Population:** Current serving members of the Canadian Armed Forces.

**Results:** Results will consist of a description of the CROMIS system, implementations steps taken, current usage numbers collected as part of routine healthcare reporting as well as findings from previously published research on the subject.

**Conclusions:** Successful adoption of measurement-based care in the Canadian Armed Forces will only be realized if it is guided from new research efforts that utilize an accepted framework from implementation science.

#### **4D01: Perceptions of Compensation and Benefits among Canadian Armed Forces Members and their Families: What do we know and where do we go from here?**

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<sup>1</sup>Department of National Defence

**Introduction:** Results of recent surveys have shown that Canadians' perceptions of the financial situation are trending downwards, with cost of living emerging as a pressing issue across Canada. The high cost of living has led to increased financial insecurity, which in turn has been associated with worse mental health. For military personnel and their families, the increased cost of living may exacerbate the well-documented pressures they face due to military life, including relocations, family separations, and employment continuity of the spouse.

**Methods:** Given the established importance of financial security to overall health and well-being, significant efforts have been made within the Department of National Defence (DND) / Canadian Armed Forces (CAF) to document CAF members' perceptions of compensation and benefits, identify relevant service gaps, and understand the impacts on well-being through research and analysis. To provide an overview of the current state of knowledge on this topic, relevant findings from a wide range of DND/CAF surveys, such as the Your Say Matters and Quality of Life surveys, were compiled and summarized.

**Results:** Results of DND/CAF research on perceptions of compensation and benefits among CAF members show that, while many express satisfaction with their compensation and benefits, opinions are divided and vary depending on their career or life stage. One study showed fewer than half were

satisfied with their pay compared to similar external jobs or perceived their pay and benefits as fair. The perceived fairness of pay and benefits has also been found to be decreasing among CAF members in recent years. Furthermore, results emphasized notable variation in the extent that subpopulations of the CAF are impacted by financial stress. Notably, CAF members who are junior-ranking or army personnel, in addition to those who are younger, have lower levels of education, or have an unemployed spouse, are at greater risk of financial stress. This is also the case among CAF members living with dependents, especially if they are single parents. Finally, one study pointed to the often negative impacts of relocation on financial well-being resulting from changes in cost of living from one location to another.

**Conclusions:** Results of past DND/CAF research on CAF members' perceptions of compensation and benefits emphasize how these evolve across various stages of the military career and point to notable disparities in financial well-being between some CAF subpopulations. A conceptual framework and follow-on research and analysis plan are being developed to address gaps in knowledge identified through this review.

#### **5A01: Protective Factors for Mental Disorders among Survivors of Military Sexual Trauma: A Canadian population-based study**

*Sommer, Jordana, MA<sup>1</sup>; Bolton, Shay-Lee, PhD<sup>1</sup>; El-Gabalawy, Renée, PhD<sup>1</sup>; Affi, Tracie, PhD<sup>1</sup>; Sareen, Jitender, MD<sup>1</sup>; Mota, Natalie, PhD<sup>1</sup>*

<sup>1</sup>University of Manitoba

**Introduction:** Military sexual trauma (MST) is a prevalent issue among actively-serving members and Veterans, and is associated with adverse health outcomes including mental disorders. This study sought to identify protective factors against the development of mental disorders among Canadian MST survivors.

**Methods:** We analyzed data from participants of the longitudinal 2018 Canadian Armed Forces Members and Veterans Mental Health Follow-up Survey (CAFVMHS) who experienced MST (rounded  $n = 455$ ; 9.6%). A semi-structured diagnostic interview assessed MST and mental disorders in accordance with DSM-IV criteria. Multivariable logistic regressions examined associations between sample characteristics (2018) and psychosocial factors (at baseline [i.e., 2002] and 2018) and any mental disorder since 2002. Analyses were run among the full subsample of MST survivors and additionally stratified by sex, when possible.

**Results:** Among MST survivors, 66.5% had a mental disorder since 2002. Among the total sample, those who were married/common-law (OR = 0.54) or on active duty (OR = 0.52) had reduced odds of any mental disorder since 2002. In addition, less frequent use of avoidance coping in 2002 and 2018 (AORs:

0.86, 0.65), more frequent use of active coping in 2018 (AOR = 0.65), less frequent use of self-medication coping in 2018 (AOR = 0.80), greater perceived social support in 2018 (AOR = 0.95), and reduced work stress across various domains in 2018 (AOR range: 0.68-0.87) were associated with reduced odds of any mental disorder since 2002. Some variability emerged according to sex (e.g., types of work stress or coping emerging as protective).

**Conclusions:** Results highlight certain sample characteristics and psychosocial factors that illustrated a protective relationship with mental disorders among MST survivors. Findings may inform targeted intervention strategies that could help mitigate adverse mental health impacts of MST.

### 5C01: Exploring the Gendered Nature of Military Education through Physical Space

*Gerbrandt, Marshall, MEd<sup>1</sup>*

<sup>1</sup>University of New Brunswick

**Introduction:** For those who are not White, cisgendered, heterosexual, and able, the gendered nature of the Canadian military represents a place of friction between who they are and what they experience. A common link is the physical space in which people exist. A disjuncture exists between the daily experiences of many members, such as a feeling of belonging, and what the Canadian military espouses. Identifying spaces within the military as gendered is not novel (Lane, 2017). Yet, by narrowing the focus to the physical building and its common spaces, I draw attention to what is often overlooked. My exploration into military space is guided by the following questions: (1) how does space become a learning space? and (2) How does space create inequities or exclusions and at the same time, how does it enable or inhibit learning?

**Methods:** Henri Lefebvre conceptualized space as a relationship between three processes: (1) spatial practice, which is the space one perceives; (2) representations of space, which is what one conceives, and finally, (3) spaces of representation, which is lived space. Taken together, they represent the ways in which we perceive and act within these spaces. Drawing upon the disconnect between conception and perception, it is useful to look to Dorothy Smith (1987) and her use of the geographical metaphor “line of fault” to describe a breakup between dominant ideologies and the everyday worlds of those who are *othered*. This paper explores that disconnect.

**Expected Results:** By spatializing education, I hope to expose the gendered natures of the learning environment that is often taken for granted by looking for points of friction by: (1) making the disconnect between the institution’s values and the daily surroundings of members visible; (2) drawing attention to the ways military members witness and experience institutional policies upheld and subverted; and (3) identifying the hidden curriculum associated with institutional spaces.

**Conclusions:** In contrast to formal learning where knowledge is often centered and obvious, the many items which make up the educational spaces’ background, through the simple and subtle act of being, support and normalize reproducing the status quo. To confront this disjuncture, there is a need to turn our attention to the ways in which military members are socialized through informal learning and more specifically, the spaces in which they learn.

### 6B02: Differences in Workplace Well-being: Who is reporting the greatest difficulties related to work in the Canadian Armed Forces?

*Daté, Anjali, MSc<sup>1</sup>; Sullivan, Rebecca, PhD<sup>1</sup>; Seidel, Laura, PhD<sup>1</sup>*

<sup>1</sup>Department of National Defence

**Brief Description:** The Canadian Armed Forces (CAF) are facing a potential personnel crisis, both suffering from recruitment shortfalls as well as retention issues. The CAF has been focusing on the workplace well-being of its members as this is known to be associated with attrition. When looking at retention of CAF members, it is crucial to identify which groups are showing signs of decreased well-being to better understand specific causes and provide targeted solutions. Research indicates that certain demographic groups report higher negative organizational outcomes such as burnout, work life conflict, and turnover intentions. For instance, women and older employees report higher burnout and work-life conflict in the general population. Based on previous findings, we hypothesized that self-reported burnout would be greater in women and older CAF members, with similar findings for turnover intentions and work family conflict. In addition, we examined differences in workplace well-being between the Reserve and Regular force.

**Patient Population:** Secondary data analyses were conducted on a sample of 530 CAF members from the Regular and Reserve forces, who completed the Climate Assessment Survey (CAS) in 2023. Analysis of Variance (ANOVA) was used to determine group differences and identify any potential interactions between the demographic variables, and regression was used to understand the relationship between well-being and age.

**Results:** Counter to prior research, results show no sex differences between men and women in any of the outcome variables. Of note, increases in age were negatively associated with burnout. Additional differences were found between Reserve and Regular Forces members for all three outcome variables, with Regular Forces members reporting greater difficulties.

**Conclusions:** The results of this study indicate that gender differences for certain aspects of workplace well-being are less pronounced in this sample than in research with other populations. Future research should consider the moderating effect of gender and gender diverse individuals. The findings regard-



ing differences between the Reserve and Regular Forces have important implications for total force workplace dynamics and overall CAF retention. Results may inform retention strategies and intervention and guide future research in identifying specific factors negatively impacting workplace well-being.

### **6B03: Morale, Burnout, and Psychological Safety among Designated Group Members in Canada's Military**

*Therrien, Megan, MA<sup>1</sup>; Pearce, Keith, PhD<sup>1</sup>; Peach, Jennifer, PhD<sup>1</sup>*

<sup>1</sup>Department of National Defence

**Introduction:** There is evidence that designated group members (DGMs; women, Indigenous members, persons with disabilities (PwDs), and racialized members) experience unique challenges within the Canadian Armed Forces (CAF), including experiencing discrimination, microaggressions, and lower scores on inclusion and retention-related measures compared to non-DGMs, which can contribute to poorer workplace well-being outcomes. Therefore, this article focuses specifically on the experiences and perceptions of DGMs within the military in terms of key workplace outcomes (morale, job burnout) and perceptions of psychological safety in the workplace.

**Methods:** Data from a broad organizational survey (i.e., the 2022 Defence Team Your Say Matters Survey) administered to a representative sample of Defence Team personnel at the Department of National Defence were analyzed. This paper focuses on a sample of 4,463 CAF Regular Forces members. Analyses of variance (ANOVAs) were conducted to identify key differences between the four designated groups and a fifth group (who were not a DGM, i.e., "everyone else") on workplace outcomes (i.e., morale, burnout) and perceptions of feeling psychologically safe at work.

**Results:** Both PwDs and Indigenous members appeared to fare worse than all other groups. Specifically, when considering workplace outcomes, PwDs scored lower on morale and higher on burnout than racialized members, women who were not part of another designated group, and "everyone else." Indigenous members scored lower on morale than women who were not part of another group and racialized members and higher on burnout than racialized members. Racialized members experienced less burnout than "everyone else." PwDs scored lower on team psychological safety than women who were not part of another group, racialized members, and "everyone else."

**Conclusions:** The findings highlight the importance of examining the unique experiences of DGMs with respect to their workplace well-being, and identify potential risk factors that may be hindering it. This research contributes to ongoing reconstitution efforts aimed at increasing recruitment and retention by shedding light on differences in key workplace

well-being outcomes and feelings of psychological safety among DGMs in the CAF.

### **6D03: A Healthy Work Environment and Psychological Well-Being among Canadian Armed Forces Members**

*Skomorovsky, Alla, PhD<sup>1</sup>; Chamberland, Justin, PhD<sup>1</sup>*

<sup>1</sup>Department of National Defence, Canada

**Introduction:** Feeling psychologically safe in an organization depends on having a respectful and fair supervisor, a psychologically safe team, and a supportive organizational climate. Very little research has examined the relationships between a healthy organizational environment at the team, supervisor, and organizational levels and the psychological well-being of military members in Canada.

**Methods:** Hierarchical regression analyses were performed separately for men and women to examine the roles of healthy work environment at team level (team psychological safety), supervisor level (supervisor's interpersonal justice and transformational leadership), and organizational level (organizational group climate, organizational diversity and inclusion, and organizational support) in the psychological well-being of a representative sample of Regular Force Canadian Armed Forces (CAF) members ( $N = 4,239$ ).

**Results:** A healthy organizational environment at three levels overall explained 22% and 27% of the psychological well-being variance among CAF women and CAF men respectively. In particular, team psychological safety remained a significant factor for CAF men and women, even when other variables were considered. However, transformational leadership explained psychological health variance for CAF women only. Organizational group climate and organizational support contributed to the psychological health of CAF men and women over and above other variables.

**Conclusions:** A greater understanding of a healthy organizational environment will inform practices to ameliorate the organizational climate and improve the psychological health of military members.

### **7B01: Enhancing R2MR's Mental Health Continuum Model**

*Wood, Valerie<sup>1</sup>*

<sup>1</sup>Departement of National Defence

**Introduction:** R2MR has several resources to support the well-being of the defence community including a mobile app. This app contains a self-assessment tool called the Mental Health Continuum Model (MHCM) where users map themselves using a slider ranging from healthy to ill (i.e., anchors) in various domains using descriptor statements. These descriptors were empirically evaluated identifying issues regarding

their validity (D'Agata, 2019), so were revised/expanded and evaluated in 2023. This expansion involved the addition of sub-domain descriptors predicted to help individuals map themselves in each domain. The purpose of this experiment was to evaluate whether presenting sub-domain descriptors in addition to the domain descriptors lead to more accurate self-mapping along the MHCM relative to the domain descriptors alone. In addition, we tested the revised domain descriptors against the previous domain descriptors to evaluate the improvement in validity.

**Methods:** A total of 274 Reg Force members at least partially completed our online study where they completed validated scales in the domain areas in addition to MHCM self-mapping task. Participants were randomly assigned to either map themselves using both sub-domain and domain descriptors, or just the domain descriptors alone (in addition to receiving either the old or new domain descriptor). In addition, the order of completing the validated scales or the self-mapping task first was randomized.

**Results:** We predicted that the addition of the sub-domain descriptors in addition to the domain descriptors would improve the accuracy of self-mapping along the MHCM, such that the correlations among validated scale scores and self-mapping scores for the six domains would be stronger for the sub-domain + domain descriptor conditions relative to the domain-only conditions. In addition, we tested whether these effects were stronger for the new domain descriptors, relative to the old ones. The addition of sub-domains improved the accuracy of self-mapping for three of the six domains (emotional well-being, addictions, and sleep). Through post-doc analyses including only the strongest sub-domain descriptors, five out of six domains had improved accuracy with inclusion of sub-domain descriptors. There were no consistent effects for new versus old domain descriptors. A revised version of the MHCM was created and will be presented.

**Conclusions:** Enhancement of the MHCM tool will help users better recognize mental health issues and seek care when necessary. These results will enhance the R2MR app MHCM tool and potentially inform R2MR training content and resources.

### 7B04: An Evaluation of R2MR Wellness Checks in Canadian Armed Forces Search and Rescue Techs

*Wood, Valerie, PhD<sup>1</sup>; Bailey, Suzanne<sup>1</sup>*

<sup>1</sup>Department of National Defence

**Introduction:** The CAF's search and rescue technicians (SAR Techs) are highly trained land and sea survival experts specializing in rescue techniques and who provide advanced pre-hospital medical care to a Primary Care Paramedic standard. R2MR delivers an educational course and wellness check during the SAR Tech's annual Ex EREBUS (Diving Exercise) to support mental health and performance, help remove barriers

to care, and encourage care seeking when necessary. Presented here are the results of two evaluations of the SAR Techs' perceptions of the R2MR wellness checks. Study One has been completed, and Study Two is in progress. Recent work by Adler and colleagues (2023) with the US Army has shown promise regarding the effectiveness of wellness checks as a preventative mental health measure.

**Methods:** In Study One, 100 SAR Techs completed an anonymous online survey that in part captured their perceptions of the R2MR wellness checks, in addition to their attitudes towards care seeking, and stigma. Study Two is in progress, where we will invite all SAR Techs (approx. n = 140) to complete our anonymous survey in the spring of 2024. SAR Techs will be asked quantitative and qualitative questions regarding their more in-depth perceptions of the wellness check including therapeutic common factors, in addition to attitudes towards seeking care-seeking, stigma, and resilience.

**Results:** In Study One we found that 85% of SAR Techs found the wellness checks helpful in maintaining their mental health. In Study Two, we will more closely examine the perceived usefulness of the wellness checks and assumed mechanisms for their usefulness (therapeutic common factors) including being listened to, gaining a new perspective, and gaining new skills. In addition, in line with Adler and colleagues (2023) we predict that there will be a relationship between the perceived usefulness of the wellness checks and outcomes including attitudes towards care seeking, stigma, and resilience, and that these relationships will be mediated or explained by the therapeutic common factors.

**Conclusions:** Initial findings indicate that SAR Techs perceive the R2MR wellness checks at Ex EREBUS to be helpful in maintaining their mental health and well-being. We hope to expand these findings in Study Two to better understand why these wellness checks might be perceived as useful. These findings may be used to help inform the potential wider adoption of wellness checks in other CAF occupational groups as a preventative mental health measure.

### Poster Presentations

#### P111: Advancing Post-Secondary Institutions along the Military, Veteran and Family Connected Campus Readiness Continuum

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<sup>1</sup>University of Alberta; <sup>2</sup>Mount Royal University

**Program/Intervention Description:** Post-secondary education is a key enabler of Canadian Armed Forces (CAF) recruitment, reconstitution, and retention, and successful transition of Veterans into civilian life. The Canadian Military, Veteran and Family Connected Campus Consortium (CMVF3C) is a

national collaboration among partners from post-secondary institutions (PSIs), CAF, Veterans Affairs Canada (VAC), Military Members, Veterans, their families, and supporting organizations. Launched in February 2023, the CMVF3C aims to: (1) facilitate a coordinated approach to post-secondary education for military members (regular force, reservists, rangers), veterans, and their families; and (2) enhance collaboration among key partners (military members, veterans, PSIs (colleges, polytechnics, and universities), CAF, VAC, business and industry partners, 3rd party providers etc.) that are invested in supporting the success of military members, veterans, and their families (MMVFs) pursuing post-secondary education (PSE). A Core Committee and working advisory groups have been established to advance the strategic priorities of the CMVF3C.

**Evaluation Methods:** This implementation study captured partners' perspectives of micro-, meso-, and macro-level issues surrounding best practices and implementation of Military, Veteran, and Family Connected Campuses (MVFCs). Qualitative data (recordings from CMVF3C advisory and working groups, monthly CMVF3C meetings, facilitator and participants notes) will be thematically analyzed.

**Results:** Data was captured from CMVF3C monthly meetings (attended by 19-48 people), core committee weekly meetings (N=8), working groups (N=15), and an annual hybrid symposium. Participants from PSIs supported the use of the Military (Veteran) Family Readiness Continuum developed by the CAF Military Transition Engagement & Partnerships team. Participants recommended: (1) co-designing work plans aimed at informing PSIs of ways to become more Military-Veteran-Family (MVF) Connected and Ready and (2) developing regional and national working groups that will evolve implementation plans, best practices related to academic support and services, and prior learning assessment for MVFs pursuing post-secondary education. They appreciated a central CMVF3C knowledge mobilization hub. Partnership engagement, research and evaluation, knowledge mobilization, and sharing of best practices were identified as the cornerstones of the CMVF3C initiative.

**Conclusions:** Many partners agree that the return on investment of aligning strategies, minimizing duplication of efforts at various PSIs, and leveraging existing efforts can be substantive. The CMVF3C and its evolving collaborative and coordinated approach is well-positioned as a national hub to bring together key partners in support of the success of Military Members, Veterans, and their families; and facilitate recruitment, reconstitution, retention, and transition. Leveraging PSIs as a force multiplier is essential to the Canadian and global community.

### **P114: Building a Ready Force: How Inclusive Leadership and Psychological Safety Drive Positive Workplace Outcomes**

*Seidel, Laura, PhD<sup>1</sup>; Sullivan, Rebecca, PhD<sup>1</sup>; Daté, Anjali, MSc<sup>1</sup>*

<sup>1</sup>Department of National Defence

**Introduction:** Fostering an inclusive and diverse environment is critical for the Canadian Armed Forces (CAF). The current research proposes that feelings of value and respect contribute to personnel psychological safety (i.e., being able to communicate without fear). Inclusive leadership helps to establish a positive climate where individuals feel valued and respected, in turn fostering psychological safety, collaboration and high performing teams. Research suggests that inclusive leadership practices have a positive impact on employee engagement, overall well-being, and retention, which contributes to building a ready and capable force. The current research examined the mediating role of psychological safety on the relationships between inclusive leadership and workplace outcomes (i.e., engagement, burnout, turnover intentions).

**Methods:** A sample of 521 CAF personnel completed the Climate Assessment Survey (CAS). We hypothesized that psychological safety would mediate the associations between inclusive leadership and workplace outcomes (engagement, burnout, turnover intentions).

**Results:** Results demonstrated significant partial mediation of psychological safety on the relationships between inclusive leadership and all workplace outcomes. Regression analyses demonstrated psychological safety as a mediator of the positive relationship between inclusive leadership and engagement and as a mediator of the negative relationships between inclusive leadership with burnout and turnover intentions.

**Conclusions:** Results demonstrated significant partial mediation of psychological safety on the relationships between inclusive leadership and all workplace outcomes. Regression analyses demonstrated psychological safety as a mediator of the positive relationship between inclusive leadership and engagement and as a mediator of the negative relationships between inclusive leadership with burnout and turnover intentions.

### **P115: Posttraumatic Growth following Canadian Armed Forces Op LASER Deployment to Long-Term Care Facilities during COVID-19 Pandemic**

*Thompson, Megan, PhD<sup>1</sup>; Nazarov, Anthony, PhD<sup>2,3,4,5</sup>; Liu, Aihua, PhD<sup>5,6</sup>; Fikretoglu, Deniz, PhD<sup>1</sup>; Michaud, Kathy, PhD<sup>7</sup>*

<sup>1</sup>Defence Research and Development Canada; <sup>2</sup>MacDonald Franklin OSI Research and Innovation Centre; <sup>3</sup>Western University; <sup>4</sup>MacMaster University; <sup>5</sup>HumanSystems Inc; <sup>6</sup>McGill University; <sup>7</sup>Director General Military Personnel Research and Analysis

**Introduction:** Military research has begun to explore post-traumatic growth (PTG), defined as positive psychological change experienced as a result of the struggle with highly challenging life circumstances. Recent research conducted

with CAF personnel who deployed into the worst affected long-term care facilities (LTCF) in Ontario and Quebec during the COVID-19 pandemic offers a unique opportunity to investigate the relation between PTG, PTSD, and moral injury.

**Methods:** Online questionnaires administered at three-time points (3, 6, and 12 months from the start of the deployment) included five items from the PTG Inventory (PTGI), an adapted version of the Measure of Moral Distress for Health Care Professionals (MMD-LASER), PCL-5, and the Moral Injury Outcome Scale (MIOS). 325 participants endorsed an item indicating that their worst, most currently distressing event as being related to the Op LASER-LTCF deployment at T1. This sample was further categorized if the person indicated the trauma was either moral (N=220) or non-moral (N=105).

**Results:** Results showed that 20% reported low, 74% reported moderate, and 6% of the sample reported high PTG following the deployment. There were statistically significant decreases in PTG at T2 and T3, although remaining “moderate” overall. Strengthened relationships, new possibilities, personal strengths, and increased life appreciation were reported; changes in spiritual growth were minimal. Reductions in perceived strength of relationships, new possibilities, and appreciation of life primarily drove PTG decreases. Critically, these reductions were only seen among those with moral trauma (vs non-moral) trauma.

Two multiple linear regression models investigating the predictors of PTG at 6 (T2) and 12 months (T3) after the deployment accounted for 58% and 42% of the variance in PTG at T2 and T3, respectively. Higher T1 PTG and reserve force were associated with higher PTG at both T2 and T3. At T2 only, positive reframing strategies, perceptions of relatedness to one’s unit members; higher anxiety symptoms but lower PTSD related to higher PTG. Endorsing a moral trauma (vs. non-moral) was related to lower PTG at T2. At T3, only being female also predicted higher PTG. Results indicated no cross-lagged effects of variables over time.

**Conclusions:** Results illuminate the nature of PTG and its developmental course, PTG predictors, and the interplay between PTG and psychological distress at three points. Recognizing the potential for growth alongside stress reactions offers further opportunities for fostering resilience after adversity and may guide more effective strategies for overcoming challenges.

### **P117: Predicting Rest, Reactivity and Recovery to Stress Demands and Exploring its Potential for Stress Exposure Training**

*Hajiakhondi Meybodi, Zohreh, PhD<sup>1</sup>; Pazdera, Jesse, BSc<sup>1</sup>; Thibault, Francis, PhD<sup>1</sup>; De Luca, Gino, PhD<sup>1</sup>; Khundrakpam, Budhachandra,*

*PhD<sup>1</sup>; Zhang, Jing<sup>2</sup>; Granek, Josh, PhD<sup>2</sup>; Choudhury, Nusrat, MEng<sup>1</sup>*

<sup>1</sup>National Research Council Canada; <sup>2</sup>Defense Research and Development Canada - Toronto

**Introduction:** Maintaining one’s composure under stress in a way that does not impact task performance is central to ‘mental readiness’ in operational environments. Often, responses to stress are multifaceted, personal and it is not always clear whether outcomes from training required skills in the classroom/with simulations effectively transfer to real-life challenges.

DRDC Toronto Research Centre, in collaboration with the National Research Council Canada (NRC), investigated the use of NRC’s Virtual Reality (VR) platform, *bWell*, integrated with physiological sensors to address these limitations, and explored pertinence for the Road to Mental Readiness (R2MR) program stress exposure training (SET). An initial study involving 12 NRC civilian employees yielded promising results, demonstrating the system’s capability to effectively induce and measure varied physiological and behavioral stress responses within a VR environment.

The focus for the current work, was to use the experimental data towards model development, aiming to predict the efficiency of self-regulatory processes through indicators like heart rate variability (HRV), facial expressions and task performance.

**Methods:** Two distinct approaches were explored for model development. The first, informed by the Neurovisceral Integration Model (NVIM)/Vagal Tank Theory (VTT), focused solely on HRV data, a key indicator of self-regulation under stress. The second, made use of machine learning (ML) techniques, leveraging NRC’s feature engineering and computation framework (*Kendra*). Here, all data were used (questionnaires/self-report, behavioural/performance measures and sensor data) and input as time-series corresponding to the collection timeline during the experimental trials.

**Expected Results:** A mathematical model was developed to simulate HRV adaptation to task demands, informed by NVIM/VTT. The model was tested against empirical data. The data was best fit by a model that quickly adapted HRV to task demands and showed a stronger physiological response to physical stress. Overall, the model generated predictions aligned with theory, and also revealed individual variability, likely due to unique differences in participant abilities.

Regarding ML, the approach was to enable prediction of the reported workloads and also to compare performance with the theory-based model. Preliminary predictions of cognitive load demonstrate a predictive power of 70%. Analyses are ongoing, due for completion in the near term.



**Conclusion:** The study findings support the use of HRV data under simulated stress to offer insights into human stress response and self-regulation. This unique integrative approach provides a comprehensive framework for developing tailored training programs, generating high-dimensional data and leveraging advanced computational techniques to further refine and personalize stress management interventions.

### **P118: Characterizing Physiological Responses to Virtual Reality-based Presentation of Two Military Decision-making Scenarios**

**Granek, Josh, PhD<sup>1</sup>**; *Thompson, Megan, PhD<sup>1</sup>*; *Boland, Hamid, MEng<sup>1</sup>*; *Khundrakpam, Budhachandra, PhD<sup>2</sup>*; *Rainville, Mark-Andre<sup>2</sup>*; *Olivares, Alejandro, BEng<sup>2</sup>*; *De Luca, Gino, PhD<sup>2</sup>*; *Thibault, Francis, PhD<sup>2</sup>*; *Zohreh Hajiakhondi, Meybodi, PhD<sup>2</sup>*; *Choudhury, Nusrat, MEng<sup>2</sup>*

<sup>1</sup>Defence Research and Development Canada; <sup>2</sup>National Research Council Canada

**Introduction:** Managing stress is central to the operational readiness and effectiveness of Canadian Armed Forces (CAF) personnel. However, preparing soldiers for operational situations involving value conflicts, i.e., moral challenges or dilemmas, remains less addressed. Yet, such situations can be associated with moral distress and moral injury, a profound disruption in psychological/social/spiritual functioning due to actions/inactions by self or others that violate important values. Traditionally, written scenarios have been used as moral decision training tools, however with recent engineering advances, immersive virtual reality (VR) approaches are increasingly used. The current study sought to characterize and integrate physiological responses to virtual reality-based presentation of two military ethical decision-making scenarios.

**Methods:** Previous validated text-based ethics scenarios were filmed in 360-degree video and delivered via “bWell”, an interactive, immersive VR platform. Physiological sensors were also integrated into bWell including the Emteq facemask for heart rate variability (HRV) measures using photoplethysmography (PPG) and facial expression/emotional detection using electromyography (EMG). 28 civilians participated, with physiological measures being captured throughout the trial including during baseline (5 minutes), during the presentation of two military moral ethical dilemmas (1. refugees under fire 2. a mother and badly injured child), and during self-reflection. Following each scenario, participants were presented with two choice options 1) help victims vs. 2) follow mission orders, and were asked to reflect on their decision using validated moral decision-making questionnaires (Moral Awareness, Moral Intensity, Moral Judgment, and Moral Emotions).

**Results:** Preliminary results revealed 46.5 % of participants elected to let the refugees under fire into the military camp, while 78% chose to help the mother and child. Comparison of the time taken for decision choice revealed a trend-level

difference ( $F = 2.9, p = 0.10$ ) for the refugee scenario dilemma indicating relatively longer time for the choice ‘Let the refugees in’. Compared to baseline, we observed decreased HRV during the refugee scenario presentation. Closer examination of HRV time course showed a small increase in HRV indicating emotional regulation throughout the presentation of both scenarios. Ongoing analyses are being performed for other physiological measures (e.g., facial expression, breathing rate, pupil dilation) and will also integrate psychological responses on moral decision-making questionnaires.

**Conclusions:** Findings from this preliminary study systematically characterize the physiological responses to virtual reality-based presentation of two military decision-making scenarios, revealing emotional regulation during stress. Future research will integrate the physiological and psychological responses. Results will help inform training interventions that may reduce moral distress/injury in CAF personnel.

### **P119: Creating Shared Language: An evaluation of the dissemination of the Glossary of Terms Version 3.0**

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**Introduction:** The Federal Framework on Post-Traumatic Stress Disorder (PTSD) Act was passed in 2018 to address the increased risk of PTSD and the need for timely access to PTSD treatment for public safety personnel, military, and Veterans. The first Glossary of Terms (GoT) was created in 2019 to support discourse on PTSD and facilitate the development of the Federal Framework on PTSD. Several iterations have followed to address changing definitions related to psychological trauma and to reflect current events, such as adding healthcare workers as a priority group during the COVID-19 pandemic. In November 2023, the GoT 3.0 was published in the Health Promotion and Chronic Disease Prevention in Canada (HPC-DP) journal, representing the first version of the glossary to be published in a peer-reviewed journal. The development of the GoT 3.0 was a collaborative effort, bringing together a multi-institutional, pan-Canadian group to add new terms. The project had two main objectives: update the glossary to reflect current terminology, and increase awareness and utilization with innovative dissemination strategies. The first objective has been accomplished and this presentation aims to share

evaluation results of the dissemination strategies used to effectively share the glossary with key stakeholders.

**Methods:** The Senior Authors team, with organizational partner support, used four main strategies to disseminate the GoT 3.0: 1) Promotion via the HPCDP journal's social media accounts; 2) Development of a social media toolkit by the Canadian Institute for Public Safety Research and Treatment (CIPSRT), which included an interactive website version of the Glossary; 3) Promotion within the Senior Authors' networks; and 4) Creation of an email address for public feedback and questions.

**Results:** Data will be compiled and analyzed closer to the conference date to provide a comprehensive outline of the full scope of dissemination success. Information presented will include the effectiveness of promotion strategies used, usage metrics (e.g., website visits, PDF downloads), stakeholder feedback, and lessons learned to inform the GoT 4.0 development and dissemination.

**Conclusions:** The widespread dissemination of the Glossary of Terms Version 3.0 fosters shared language in Canada. The development of common language can help address the mental health and wellbeing needs of Canadians who step up to work in frontline and high-risk professions, for the benefit of us all. *We sincerely thank these individuals for their service.*

### **P120: Changes in Veteran Identity among Canadian Armed Forces Members during Military-to-Civilian Transition: Findings from a longitudinal qualitative study**

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**Introduction:** Military-to-civilian transition (MCT) is understood to be the process of leaving military service and transitioning to civilian life. The complex process of leaving military service and re-establishing oneself as a civilian can create an identity conflict for Veterans, resulting in health and well-being implications. A longitudinal qualitative study was conducted to explore the mental health and well-being of a sample of Canadian Armed Forces (CAF) members and Veterans followed through MCT. This presentation provides insight into a sub-set of findings that explore the changes to identity among CAF members and Veterans during MCT.

**Methods:** Employing a variety of sampling strategies within the CAF, eligible participants included those serving in the Regular Force and Reserve Force who were releasing medically, voluntarily or were at the end of service. Using sociodemographic questionnaires and semi-structured interviews,

data were collected from participants at two time points: 0-6 months prior to release (T1) and 6-12 months post-release (T2). Data analysis consisted of grounded theory techniques to code, categorize, and develop themes.

**Results:** In total, 75 English speaking participants participated at T1, with 68 English speaking individuals participating at T2. Most participants were male, released medically, and served in the Regular Force. Overall, participants described a diverse range of experiences emerging from the identity transitions ongoing through MCT, including developing new interests and daily routines, accommodating perceived differences in civilian work-styles and priorities, and developing a new and purposeful life. For some, a lack of control over the circumstances and conditions of their release incited feelings of failure as they realized that they would now not be able to achieve the career goals originally set forth for themselves. Identity shifts post-service also had an impact on the sense of belonging previously sustained through unit cohesion. Moreover, loss of tangible and meaningful symbols of service, such as the military uniform, compounded feelings of loss associated with identity shifts. Fear of being misunderstood within the civilian community was also shared by participants.

**Conclusions:** This study is the first longitudinal qualitative exploration of mental health and well-being of individuals during MCT. With approximately 5500 individuals releasing from the CAF annually, the findings of this study offer new and important insights into the identity changes that can be experienced by CAF members and Veterans as they experience MCT.

### **P121: Availability and Description of 2SLGBTQIA+ Cultural Competency Training within Five-Eyes Nations Militaries: An Environmental Scan**

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**Introduction:** Cultural competency has been identified as a useful tool for interacting with communities in varying settings, such as health care and employment. For military members and Veterans, military culturally competent care has been shown to improve interactions for clients and practitioners. It is also beneficial with other groups, such as 2SLGBTQIA+ people (Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual, plus other identities), who also have intersecting identity factors, such as military service or being a Veteran. These intersecting identities can impact engagement with programs, services, policies, etc. When employers, leaders, and colleagues are culturally competent, they have some understanding of the unique circumstances, needs, and challenges for these communities, which can positively impact engagement.

**Methods:** This project employs an Environmental Scan (ES) to explore and describe any cultural competency training within Five-Eyes militaries related to 2SLGBTQIA+ identity. This could include culture change initiatives, sensitivity training, diversity training, equity training, bias awareness training, among others. The team will develop a search strategy by determining the type of information to be included, along with its sources, and a list of questions to ensure that scanning activities are targeted and effective. The team will analyze the data for issues and trends, working iteratively, as gaps in information or new questions may arise during information gathering. After the online search, the team will contact relevant organizations directly for more information to provide fulsome results.

**Results:** Results of this project are still pending. This project will explore the types of cultural competency training provided through Five-Eyes Nations armed forces that exist to educate military members about the 2SLGBTQIA+ community. This ES is an important step in determining what training/programs are currently available to members/leaders to increase cultural competency for 2SLGBTQIA+ military and Veterans and what these programs “look like.” Through this scan we can learn what is being offered, how offerings have been developed, what stakeholders have been involved, methods of dissemination and content, how long training has been offered, if/how is it being evaluated, how are Veterans being defined in these spaces, if there is a focus on trauma, and if/how families are involved.

**Conclusions:** The results of the ES will provide a snapshot into the resources available to support cultural competence in 2SLGBTQIA+ issues within Five-Eyes nations militaries. These results will be used to increase the awareness of availability and description of programs and resources and elucidate gaps where future program development could take place.

## **P122: Serving Those Who Served: Examining the Mental Health Outcomes of Inpatient Programming for Canadian Armed Forces and Veterans**

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<sup>3</sup>Edgewood Health Network Canada; <sup>4</sup>University of Ontario Institute of Technology

**Introduction:** Members of the Canadian Armed Forces (CAF) serve the nation in a multitude of ways. Due to the nature of their work, they are frequently exposed to repeated stressors. Subsequently, there is a significantly increased likelihood that these individuals will be exposed to psychologically traumatic events. The demands of the job can often result in lingering mental health disorders such as PTSD, anxiety, depression, and substance use disorder. Therefore, the mental health and well-being of CAF members and veterans should be high priority and treatment programming is vital to increasing

their overall health. Evaluating these programs is important to ensure positive health outcomes and promote best practices across the country. As such, the current project aimed to evaluate the effectiveness of three inpatient residential centres across Canada that have a specific programming for treatment-seeking veterans (VAC) or individuals part of the CAF. The current study assessed psychological, addiction-related and trauma-specific related outcomes for all VAC and CAF clients, separately, over the course of one of five inpatient treatment programs operated by Edgewood Health Network (EHN).

**Methods:** Clients completed a battery of standardized assessments to measure mental distress and addiction symptoms at admission into treatment and at discharge from treatment.

**Results:** Findings suggest that between admission and discharge, there were significant ( $p < 0.001$ ) reductions in anxiety ( $d = 1.24$ ) and depressive ( $d = 1.42$ ) symptoms, along with symptoms of traumatic stress ( $d = 1.02$ ) and substance dependence ( $d = 1.52$ ) between admission and discharge for both VAC and CAF populations. Significant improvements in functional impairment ( $d = 1.06$ ) across multiple domains were also demonstrated for both VAC and CAF clients.

**Conclusion:** These findings suggest favourable effects of specialized treatment programming for these populations. Future research and initiatives may explore customizing interventions to address the unique needs of subgroups within CAF and veteran populations. Tailoring treatment may enhance treatment efficacy and promote stronger outcomes.

## **P123: Beyond Silence: Implementing App-Based Peer Support within the Canadian Forces Health Services**

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**Introduction:** Healthcare workers in the Canadian Forces face significant challenges in their day-to-day work, leading to an increased risk of moral injury, mental health issues and burnout. The Canadian Forces Health Services (CFHS) provide critical support to over 65,000 Armed Forces members, but it can be difficult for them to access relevant, responsive support for themselves. Peer support is a promising first line approach since peers understand the unique context of CFHS work. Accessing peer support through a mobile health platform also has the potential to increase accessibility, ensure privacy and reduce the stigma of reaching out. The purpose of this implementation study (beginning in March 2024) is to track the implementation and impact of Beyond Silence, a new mobile health application designed to facilitate early intervention and support for healthcare workers.

**Methods:** A six month implementation trial of Beyond Silence will be conducted with approximately 5,000 CFHS members

from March to August 2024. Patterns of app use (# downloads, features accessed, peer support outreach) will be examined to understand reach and adoption rates, considering sex/gender and years of experience. Baseline and follow-up interviews with organizational champions, and follow-up focus groups with peer support providers will be conducted to identify facilitators and barriers to app use within the unique context of CFHS. Pre/post surveys with app users will also be conducted to examine the perceived impact on mental health. Analysis will be informed by the Consolidated Framework for Implementation Research.

**Results:** Thirty-five CFHS members volunteered to complete the peer support training and to provide support to their colleagues. In the first month, there were over 200 app downloads. Baseline interview data with four organizational champions noted leadership support, but also potential challenges to accessing support in the context of military health services (e.g., stigma, a culture of stoicism, and limitations in technology infrastructure). Initial response has been positive, but uptake will be monitored over time. Patterns of app utilization, peer support outreach, and perceived impact on mental health will be reported by age, gender, and service role. Analysis of forces shaping uptake of the app will consider a range of contextual factors both within and outside the organization, characteristics of the app, and the process of implementation.

**Conclusions:** Beyond Silence is a promising platform to reduce barriers to accessing support within CFHS, however, systematic evaluation is needed to understand optimal implementation and impact. Study findings will inform recommendations for organizational leaders, and future research.

## P124: Exploring the Unique Experiences of Military Sexual Trauma Amongst Canadian Armed Forces Reservists and Veterans

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**Introduction:** Current research and reports on culture change within the Canadian Armed Forces (CAF) note the necessity of addressing how military sexual misconduct (MSM) and military sexual trauma (MST) affects various groups differently. For example, research on Reserve Force is limited despite occupying 30% of the CAF membership. While MST research has seen an uptake by the military and academic communities, there remains room to address the unique experiences of Reserve Force members. Hearing the perspective of those impacted by sexual misconduct (SM) is vital to understanding and addressing the issue, and to implement integral cultural change. This study will potentially provide CAF insight into

concrete steps on how to address and prevent MSM/MST within Reserve Force.

**Methods:** Utilizing qualitative content analysis, we seek to understand the experiences of current CAF Reserve Force members and Veterans who have experienced MST in the CAF. With SSRRB approval we will recruit 15-20 English speaking participants across the country who have or are currently serving in the CAF Reserve Force. We will be conducting interviews via telephone or videoconferencing software about their experience of MST. We will use an inductive, interpretive phenomenological approach to analyse the results. All sex, gender identities, age ranges (18+), and years of service are eligible for participation in the study.

**Results:** Through prioritizing the experiences of Reservists, a more expansive understanding of the unique impact of MSM/MST on under-researched populations within the CAF will be gained. Through qualitative interviews on both actively serving Reserve members and Veterans, this project seeks to build a holistic picture of sexual misconduct within the Reserve Forces. This project will explore the unique circumstances between Reservists and Regular Force experiences, allowing the CAF to implement integral changes to address these needs. Focusing on this under-researched population will allow us to provide suggestions for policy changes related to Reserve Force members to support the CAF in addressing systemic issues around recruitment, retention and release decisions of Reservists that have experienced MSM/MST.

**Conclusions:** As noted, the Reserve Forces are an essential understudied population within the CAF. This project will enhance the CAF's understanding of the impact of MSM/MST on Reservists. Building on knowledge of how sub-cultures experience sexual misconduct, our recommendations will provide direction to assist the CAF in addressing how MST and MSM in the Reserves affects the recruitment, retention, and release decisions/circumstances and build up sustainable culture change.

## PRIMARILY PHYSICAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1A02: Effectiveness of a Fitness Screening Test for Canadian Armed Forces Basic Training

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<sup>1</sup>Canadian Force Morale and Welfare Services

**Introduction:** A current Canadian Armed Forces (CAF) priority is Force Generation. Optimizing the success of recruits at basic training while minimizing the risk of injury is the objective of the new Basic Military Qualification (BMQ) curriculum to



support Force Generation. Among the changes, a Basic Training Fitness Test (BTFT) with three performance zones (green, yellow, red) was implemented to determine the physical readiness and assess injury risk. The purpose of this study was to evaluate the relationship between the BTFT, course completion and musculoskeletal injuries (MSKI).

**Methods:** From January to May 2023, five BMQ 8-week courses (25 females (age: 23.6 (5.0) y/o, height: 163.8 (7.0) cm), 204 males (age: 22.5 (5.6) y/o, height: 176.7 (7.2) cm), for a total of 229 recruits) consented to the study (DRDC HREC 2021-017 amendment 4) while going through the recently amended curriculum. The BTFT and body composition measurement were completed during the first week of training while the FORCE evaluation was administered in week five. The BTFT includes a 1.6 km walking test, a 20-meters rush, and a sandbag drag evaluation. Injury surveillance was performed over the 8 weeks with a self-reported questionnaire and a copy of medical employment limitations (MELs) following a consultation at the medical clinic.

**Results:** Graduation rate of the sample was 83.4 %. A total of 14.4 % of recruits suffered a MSKI that led to a total of 182 days under MELs while 3.9 % of the sample had to interrupt training as a result of severe injury. Significant differences ( $p \leq 0.05$ ) were observed between sex on most body composition measures, BTFT and FORCE evaluation results. Overall, 180, 35 and 14 recruits scored in the green, yellow and red zones respectively on the BTFT. A higher proportion of recruits suffering an MSKI scored in the yellow zone compared to non-injured recruits on the BTFT. Finally, there is a significant but weak to moderate (Cramer's  $V = 0.18$ ) association between results on the BTFT with MSKI and graduation status.

**Conclusions:** Recruits significantly improved from BTFT on week 1 to FORCE on week 5 when comparing the 20mR and SBD components. Performance threshold on the BTFT elements seem to support MSKI prediction but could be slightly modified to increase the prediction power for MSKI and/or graduation delays. Military Impact: Early readiness screening provides members an opportunity to familiarize themselves with the inherent physical demands of basic training, thus supporting Force Generation and Retention.

### 1A03: Implementation of a Pre-Basic Military Training program for the Canadian Armed Forces

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<sup>1</sup>Canadian Forces Morale and Welfare Services

**Program/Intervention Description:** Force Generation and Retention are two current priorities for the Canadian Armed Forces (CAF). Ensuring recruits are physically prepared for the rigors of basic training is key to minimizing the risk of injury and optimizing graduation timelines. A 12-week Pre-Basic

Military Training (Pre-BMT) Program has been developed and is available online, free of charge, for civilians preparing for basic training. The purpose of this study is to describe the program and to present preliminary data collected from a survey administered to recruits and online analytics.

**Evaluation Methods:** The Pre-BMT is a 12-week fitness training program aiming to establish a minimum level of physical fitness needed to optimize performance and reduce the injury risk during BMT, and launched in Feb 2023. The program is clustered into 3 strengthening circuits (individual youtube description videos), a walk and a run progression (goal of 13 000 steps per day, and 20 min continuous jog). A survey to evaluate the program was developed and is administered to consenting recruits at Canadian Forces Leadership and Recruit School. The survey results were collected between Nov 2023 and March 2024, and the online analytics covers the period from February 2023 to February 2024.

**Results:** 1453 recruits consented to answer the pre-BMT survey. Of the sample, 30.0 % ( $n = 434$ ) had access to the pre-BMT during their enrolment period. From those who had access, 8 % ( $n = 36$ ) fully or 41 % ( $n = 178$ ) partially completed the pre-BMT. The satisfaction rate of the program was 74 % and with 95 % recommendation. From the online analytics, the strengthening circuit videos totaled 3161 views; with average view duration of 19 to 28 % of the video. The pdf version of the program was downloaded 2947 times.

**Conclusions:** To increase access (and usage) of the pre-BMT program, an info postcard was developed and will be distributed by the recruiting centres directly to recruits; in addition to virtual and social media content to promote the program. A shorter version and an advanced version will be developed to reach recruits with short enrolment timeframes and those already physically active. Finally, nutritional and physical recovery content will be added to the program.

Physical preparation prior to basic military training is fundamental to sustain overall Force Generation and Retention; and to ensure members have the physical capabilities and resiliency to succeed through each phase of their careers.

### 1A04: Characterizing Women going through Basic Training at the Canadian Force Leadership and Recruits School

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<sup>1</sup>Canadian Force Morale and Welfare Services

**Introduction:** The research program established by Canadian Forces Morale and Welfare Services (CFMWS) at Canadian Force Leadership and Recruits School (CFLRS) is focused on better understanding the population joining the CAF and going through basic training. The purpose of this study was

to define the characteristics of women joining the CAF and reporting to CFLRS for basic training.

**Methods:** From November 2023 to March 2024, recruits and officer cadets went through the 9-week or 12-week of basic military training (BMT), respectively. All recruits were offered to participate in the study and 201 women consented. Participants were asked to complete an electronic questionnaire (week 1), provide their Basic Training Fitness Test (BTFT – week 1) and FORCE (week 6) results, and complete body composition measurements (InBody 270 – week 1).

**Results:** Overall, 201 (15.0 %) women (age:  $25.9 \pm 7.1$  years, height:  $164.5 \pm 6.4$  cm), 1090 (84%) men and 8 (0.66%) diverse gender joined the study (acceptance rate of 99%). Fifty-four (26.0%) women had a history of pregnancy, with an average of 1.8 children before BMT. Mothers were significantly older than women without child (23.4 (5.3) VS 34.6 (6.0) years old respectively). Regarding body composition estimates, BMI ( $\geq 35$ ) characterized 26 % of the women sample as obese, while body fat ( $\geq 35\%$ ) indicated an obesity rate of 40 %. Finally, 48 % of women were characterized as low performers on the BTFT. Women showed improvements on the 20 meter rushes from 43.86 to 40.97 sec ( $p=0.000$ ) but not on the sandbag drag from 25.30 to 24.44 sec ( $p=0.48$ ) between the BTFT and the FORCE evaluation.

**Conclusions:** In order to adapt physical training and provide tools for women to succeed during basic training, it's important to have a better understanding of their initial health characteristics and fitness levels. The results of this study will continue to provide leadership with valuable, holistic health related information about the women joining basic training. Military Impact: This information should be used to develop programs to better support women throughout their career in the CAF from recruitment to retirement and provide strategic direction for women wellness.

## 1B02: Injuries in the Canadian Armed Forces: A Summary of Administrative Health Data

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**Brief Description:** Injuries impact overall health, wellness, career progression, and operational readiness of the Canadian Armed Forces (CAF). The Canadian Forces Health Information System (CFHIS) is the electronic health records system and a key data source for detailed analysis of CAF injuries. Clinical data analyses can provide accurate, timely, and actionable data on injuries to support injury prevention initiatives.

**Patient Population:** Two data sources were used. The first was the CFHIS Clinical Data Extract containing all primary care clinical encounters recorded within the CAF, which captures

visits related to injury. The second was the Master Patient Index, a demographic administrative dataset of CAF members eligible for health services, is used to calculate rates of injury overall and rates by key demographic and military variables. An ICD-10 based injury classification system was developed, grouping injuries by type, body regions and mechanisms. Statistics are presented for total volume of visits and estimated unique injuries overall for the CAF and by key variables (e.g. week, sex, rank, and age group). Data from 2023 were analyzed and compared against previous years during the pandemic and pre-pandemic.

**Results:** Of 59,343 clinical visits that had an ICD code related to injuries in 2023, there were 35,123 unique injuries. Individuals with one or more consultations for injuries totaled 19,417 for lower back and pelvis injuries (most common), followed by head and neck ( $n=8,078$ ), and then knee and lower leg ( $n=6,310$ ). The percentage with at least one injury consultation in 2022 for females (36.4%) was higher than that for males (29.5%); higher in non-commission members (NCMs) than officers, especially senior NCMs compared to senior officers (41.3% vs 27.6%); and were highest in the oldest (50+ years, 41.0%) and second oldest (40-49, 37.9%) age groups. There were notable seasonal fluctuations as well, with peaks seen in April and July. Total annual visits were 18% higher than in 2022, 26% higher than in pandemic years (2020-2022), and 6% higher than pre-pandemic (2017-2019).

**Conclusions:** There were a large number of visits related to injuries that were captured in CFHIS in 2023. Visits due to injury were not distributed evenly; injuries were more frequent among females, NCMs especially senior NCMs, and in older members. This analysis is consistent with previous findings that injuries are a notable source of morbidity in the CAF. Health record data have limitations, further validation work and better case-definitions will improve the precision of injury surveillance.

## 2A01: A Comparison of Physical Fitness and Musculoskeletal Injuries in Females Employed in Military and Non-military Arduous Careers

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<sup>1</sup>University of Ottawa; <sup>2</sup>University of Sherbrooke; <sup>3</sup> Bishop's University

**Introduction:** Musculoskeletal injuries (MSKi) place a significant burden on female military service members, first responders, and healthcare providers. Military and arduous occupations (non-military [NM]) populations are often examined together in research, but a direct comparison of physical fitness or common injuries of these groups has yet to be conducted on females in these roles.

**Methods:** This study combined data from two independent projects that applied the same physical testing protocol and a similar health demographics questionnaire. Fifty-seven females employed as either a firefighter, paramedic, law enforcement officer, or healthcare provider and 90 female members of the Canadian Armed Forces (CAF) completed the following assessments: *i*) muscular power (standing long jump and medicine ball throw), *ii*) muscular strength (4 repetition maximum back squat and bench press), *iii*) muscular endurance (Biering Sorenson test, single-leg wall sit, and push-ups), *iv*) flexibility (sit-and-reach), and *v*) aerobic capacity (graded treadmill VO<sub>2</sub>max test). Chi-square, Fisher's exact test, and likelihood ratios were used to compare MSKi history between occupation groups. Comparisons of physical fitness test results between occupation groups (military v. non-military) were first performed using independent t-tests. Univariate analysis of covariance (ANCOVA) were applied when occupation was significantly related to a physical fitness test result at the t-test. Significance was set to  $p < 0.05$ .

**Results:** Female members of the CAF were more likely to sustain injuries involving the back (CAF 68.9% vs. NM 45.6%, [OR:2.56, CI:1.27-5.17,  $p = 0.008$ ]), hip (CAF 40.0% vs. NM 24.6% [OR: 2.41, CI:1.11-5.28,  $p = 0.026$ ]), foot (CAF 33.3% vs. NM 15.8% [OR: 3.43, CI: 1.41-8.34,  $p = 0.007$ ]), and lumbopelvic hip complex (CAF 73.3% vs. NM 50.9%, OR:2.94 CI:1.42-6.07,  $p = 0.004$ ), while those employed in healthcare or as first responders were more likely to experience a thumb injury (CAF 3.3% vs. NM 15.8% [OR:0.223, CI:0.06-0.90,  $p = 0.036$ ]). The NM group performed better in the bench press, back squat, Biering Sorenson test, single leg wall sit (both legs), and completed more push-ups than the military group.

**Conclusions:** The superior physical fitness in the NM group and increased likelihood of MSKi in the CAF participants suggest these groups are less comparable than traditionally thought. Initiatives and research to support females employed in arduous occupations should differentiate between military and non-military populations.

## 2A02: Phase III Trial to Investigate the Feasibility and Fidelity of the Royal Canadian Air Force Aircrew Conditioning Program

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**Introduction:** More than 90% of RCAF aircrew report significant flight-related neck pain (Smith, 2021). As recommended by the NATO HFM RTG 252 (Farrell, 2020) and demonstrated by the RAF and RAAF, the Aircrew Conditioning Program (ACP) effectively reduces/prevents neck injury, reduces time away from flying and improves performance (Slungaard, 2018;

Slungaard, 2019; Wallace, 2019). Building on the results and lessons learned from the Phase II Trial, the revised RCAF ACP was implemented at 12 Wing Shearwater, 4 Wing Cold Lake and 3 Canadian Forces Flying Training School (CFFTS). Implementation required a dedicated Physical Exercise Specialist (PES) and commitment from RCAF leadership to mandate that all aircrew complete a minimum of two RCAF ACP training sessions per week.

**Methods:** Feasibility was evaluated by participation. Fidelity (effectiveness) was measured by a review of health record information, surveys and physical performance tests at baseline, 3, 6 and 9 months. Phase III will also determine optimal means to quantify program effectiveness, by comparing survey results to other means of collecting similar information: individual electronic health record review, physiotherapy referral forms, Monitor Mass and Flying Unit Flying Program Schedules.

**Results:** From baseline to 3-months, cervical spine flexion improved by 6.4% in Shearwater and by 30% in Cold Lake participants. Y-balance also improved significantly: medial reach (L:6%, R: 4%), inferolateral reach (L: 6%, R: 8%), and right superlateral reach (R: 2%). The right-side plank (McGill Protocol) improved significantly by the Cold Lake participants (10%) only. Neck strength (extension) was found to be positively correlated with compliance,  $R^2 = 0.617$ ,  $p\text{-value} = 0.001$ ,  $df = 25$ . 12 Wing Shearwater compliance rates ranged from 42-58% attending 2 sessions, 13-21% attending 1 session and 19-38% attending 0 sessions, most of weeks 1-12. 12-30% of participants were unavailable to attend sessions. 4 Wing Cold lake compliance rates range from 17-28% attending 2 sessions, 23-28% attending 1 session and 25-50% attending 0 sessions, most of weeks 1-12, where the majority of personnel were available to attend sessions.

**Conclusions:** Objective testing suggests that the RCAF ACP is effective after 12 weeks of training and improved performance is positively correlated with compliance. However, compliance continues to be the biggest barrier to success; Chain of Command support is the biggest contributor to success. The Phase III trial 6-month results, analysis and associated discussion/conclusions will form the basis of this presentation in October 2024.

## 2A03: Effectiveness and Cost-utility Analysis of Group Physiotherapy Programs in the Treatment of Various Musculoskeletal Disorders in the Canadian Armed Forces Military Personnel

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**Introduction:** The high prevalence of musculoskeletal disorders (MSKDs) among the Canadian military personnel, coupled with limited resources, hinders access to rehabilitation care in the Canadian Armed Forces (CAF). To overcome this problem, CFB Valcartier's Physiotherapy (PT) Department has created group PT programs targeting the most common MSKDs among military personnel (i.e., low back pain, shoulder pain, patellofemoral syndrome [knee], and ankle sprains). These programs allow more patients to seek care at the same time, thereby helping improve access to care. However, their effectiveness and efficiency in a high quality randomized clinical trial have yet to be demonstrated.

The primary objective of this pragmatic randomised clinical trial (RCT) was to compare the effectiveness (disability and pain) of group PT programs to usual PT care (one-to-one) in military personnel presenting MSKDs. Secondary variables were quality of life, patient satisfaction with treatment and outcomes, and cost-utility analysis.

**Methods:** This RCT was conducted within CFB Valcartier's PT Department. One hundred and twenty military personnel presenting one of the four targeted MSKDs were recruited and randomly assigned to one of the two types of interventions (group or usual care). Disability, pain intensity and quality of life were measured at baseline, and 6, 12 and 26 weeks after the start of the intervention. Patient satisfaction was assessed at the end of the intervention. The cost-utility analysis was carried out from a CAF perspective over a 6-month time horizon, and included all costs related to the treatment of the included MSKDs (medical consultations, physical therapy treatments, other allied health professionals, laboratories, imaging, medication).

**Results:** Both groups showed significant improvements of pain and disability at every time points (time effect  $p < .01$ ), but there was no between-group difference (Group x Time interaction  $p > .67$ ). Both interventions were shown to be equally effective. Patients' satisfaction with treatment and outcomes were also not different between groups ( $p > .05$ ). The group PT programs were however cost effective, with less costs than the usual care and similar effectiveness (mean cost/patient: Group=\$531.93; Usual=\$599.43).

**Conclusions:** Group PT programs proved to be as effective as usual care in the management of various MSKDs in military personnel. Given its efficiency compared to usual care, it is a strategy worth considering for optimizing the use of resources and improving access to rehabilitation care.

## 2A04: Comprehensive Analysis of Canadian Armed Forces Physiotherapy Services: Trends and Insights 2020 - 2023

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<sup>1</sup>Departement of National Defence

**Program/Intervention Description:** This evaluation aims to analyze the utilization patterns and trends of CAF physiotherapy services from 2020 to 2023. Data from the Canadian Forces Health Information System (CFHIS), specifically the physiotherapy referral and note extract, were collected and analyzed for this comprehensive analysis. The evaluation covers key metrics, including physiotherapy referrals, anatomical locations, and discharge summaries, providing insights into healthcare delivery for CAF personnel.

**Evaluation Methods:** The evaluation utilized data extracted from the CFHERO population health surveillance system, which collects and links routinely collected data from the Canadian Forces Health Information System (CFHIS) and other sources within the DND/CAF. Physiotherapy referral, assessment, treatment record, progress note, and discharge summary data from January 2020 to December 2023 were analyzed. Duplicate observations were removed, and anatomical locations were identified using physiotherapy Clinical Impression Classification (CIC) codes which is a standardized list used in CFHIS and are mapped to ICD codes to provide a more real world explanation of the condition. Eligibility status was determined based on existing guidelines, and a risk-based data disclosure protocol was followed to ensure confidentiality. Data were stratified by base and time (month and year).

**Results:** The analysis revealed a total of 29,465 physiotherapy referrals in 2023, with notable trends in anatomical locations. Even though since 2020 the annual number of referrals has been increasing, consistently the lumbo-sacral spine, knee, shoulder, and cervical spine were the most common areas requiring physiotherapy intervention. There is also a noted variability in the primary anatomical location across bases/wings, indicating differing physiotherapy needs across the country. Referral urgency was predominantly priority 2 or 3, and there was variability in urgency levels across CAF locations. The distribution of referrals and discharge summaries varied across CAF locations, reflecting diverse physiotherapy needs nationwide. Additionally, most file closures were due to patients reaching discharge criteria or ceasing treatment attendance.

**Conclusions:** The evaluation underscores the importance of understanding utilization patterns and trends in CAF physiotherapy services. The findings highlight the need for targeted interventions and resource allocation to address prevalent musculoskeletal issues among CAF personnel effectively. Furthermore, the variation in physiotherapy needs across bases



emphasizes the importance of tailored healthcare delivery strategies to optimize patient outcomes and operational readiness. These insights will inform evidence-based decision-making and continuous improvement in CAF healthcare delivery.

## 2A05: Comparison of Lower Extremity Biomechanics and Effort in Male and Female Military Members During a Standardized Load Carriage Task

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<sup>1</sup>Canadian Forces Health Services Group; <sup>2</sup>Dalhousie University

**Introduction:** Knee osteoarthritis (KOA) is prevalent in military populations. The relationship between loaded marching and KOA development/progression is not well understood and female military members are under represented in military load carriage studies. The primary objective of this completed study was to better understand the effect of military load carriage, using operationally relevant load and speed, on knee joint moment features linked to the development/progression of KOA and whether there are differences between male and female military members. Secondly, the study examined the effects of load and speed on measures of effort and forward trunk lean, and whether there were differences in these measures for males and females

**Methods:** 24 military members (10 female) walked at self-selected speed (loaded/unloaded) and fixed speed (loaded) on an instrumented treadmill. The self-selected speed was similar to that reported elsewhere for healthy adults while the fixed speed was similar to that used in military testing/training. The standard, operationally relevant, load totaled 35 kilograms and was divided asymmetrically between a weighted vest and a backpack. Motion capture cameras, Qualysis, and custom written software (MatLAB) were used to capture, analyze, and calculate four discrete knee joint moment features and trunk flexion angle during the load carriage tasks. Perceived exertion and a quantitative measure of knee extensor effort were also recorded post walking. Descriptive data was collected, and knee extensor and flexor strength were measured using an isokinetic dynamometer for all participants. Repeated measures analysis of variance models ( $\alpha=0.05$ ) tested for between condition differences for the total sample. Confidence intervals (95%) were calculated to determine between sex and between conditions within sex pairwise differences.

**Results:** Greater frontal and sagittal plane knee moment features, perceived exertion, and forward trunk lean were found for loaded versus unloaded conditions. Three joint moment features were different between the two loaded conditions. One joint moment feature was different between sexes and males and females did not have the same between condition pairwise differences for three of the four joint moment features.

**Conclusions:** Loaded marching and increased speed increased frontal and sagittal plane knee moment features indicating higher overall KOA risk for loaded, fixed pace, marching. Preliminary data indicate differences in knee joint moment features for male and female CAF members during load carriage with operationally relevant load and speed indicating that risk for males and females is not the same. Knee extensor muscle effort was not the same for males and females.

## 2A06: A Descriptive Statistical Analysis of Canadian Armed Forces Physiotherapy Workload while on Deployment in Latvia

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<sup>1</sup>Departement of National Defence; <sup>2</sup>Defence Research and Development Canada

**Program/Intervention Description:** Musculoskeletal (MSK) injuries are a prevalent concern within military populations, significantly impacting military readiness. Injury surveillance projects are increasingly common to comprehend injury profiles and their implications on deployability. The literature on MSK injuries in military personnel has grown over the years, emphasizing the importance of proactive intervention strategies. One such strategy involves deploying military physiotherapists to provide MSK assessment and care during operations, aiming to reduce duty time lost and repatriations.

While studies on this subject have proliferated, there remains a dearth of research examining injury profiles on Canadian Armed Forces (CAF) operations or the efficacy of CAF physiotherapists. This study seeks to fill this gap by analyzing the workload and injury profiles of patients deployed on Operation REASSURANCE in Latvia. The primary goals include quantifying assessments, describing injury profiles, and examining trends in injury severity and causes among Canadian and Sending Nations (SNs) personnel. This study provides valuable insights into the effectiveness of physiotherapy services in deployed settings and informs future strategies for mitigating MSK injuries among military personnel.

**Evaluation Methods:** Data on physiotherapy workload were collected during 12 rotations of CAF deployment in Latvia up to the end of 2023. Workload measures included the number of assessments, treatments, injured body parts, priority of care, and causes of injuries. Statistical analyses were performed to compare workload metrics between early and late deployment periods, as well as between Canadian and Sending Nations (SNs) members.

**Results:** Analysis of 3032 assessments revealed that Canadian personnel accounted for 63.85% of assessments, despite comprising only 34.95% of the Battle Group. The most frequently assessed body parts were the back, shoulder, knee, and ankle. There was a significant decrease in the average number of

assessments and treatments per member of the Battle Group between early and late deployment periods for both Canadians and SNs. Priority assessments were predominantly classified as Priority 1 or 2, indicating acute or sub-acute injuries. Physical training was the leading cause of injuries among Canadian personnel.

**Conclusions:** This study underscores the significance of proactive physiotherapy intervention in mitigating musculoskeletal injuries among military personnel deployed on Operation REASSURANCE. By quantifying assessments and analyzing injury profiles, valuable insights into injury severity, causes, and trends have been gained. These findings emphasize the importance of continued investment in physiotherapy services during military operations to enhance deployability and reduce duty time lost. Future strategies should focus on targeted interventions to address prevalent injury types and risk factors effectively.

### 2C03: Insights from United States Navy Nurses: Deployed at Sea amidst the Pandemic

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**Introduction:** The study purpose was to gather first-person narratives from shipboard United States Navy (USN) nurses deployed at sea during the Coronavirus disease 2019 (COVID-19) pandemic. The study aims were to: 1) describe the experience of shipboard nursing during the pandemic and 2) analyze accounts from USN nurses deployed at sea during the pandemic to glean recommendations for training and future direction concerning the suppression and transmission of infectious diseases while underway.

**Methods:** Institutional review board approval was obtained from two universities. This two-year study utilized a qualitative descriptive design that employed content analysis for data analysis of semi-structured virtual interviews. Inclusion criteria were USN nurses who deployed from 2019-2021 to aircraft carriers, with fleet surgical teams (FSTs), on hospital ships, and/or with US Marine expeditionary units (MEUs). Quantitative data collected from the demographic questionnaires were organized and analyzed using SPSS software. Qualitative data were managed and examined using MAXQDA software.

**Results:** Thirty USN nurses were interviewed for this study. Participants were very candid about deploying at sea during a pandemic, which we labeled as “Bubble-Bubble Deployments” (theme 1); “Coping with the Loss of Freedoms” (theme 2); “Making Do” regarding innovations that occurred during the deployment (theme 3); “Making it Better for the Next Genera-

tion” (theme 4); and “Mitigation” (theme 5) whereby the USN maintained its operational tempo despite the pandemic with the following mitigation examples: 1) implementing restriction of movement (ROM) protocols prior to deployment and/or return to the ship, 2) testing prior to, during, and after deployment, 3) placing preventive medicine technicians onboard USN ships, 4) changing sick call routines, 5) instituting/increasing “cleaning stations,” 6) modifying the shipboard work environment to prevent the spread of infection, 7) extending time at sea if need be, 8) assessing the risks/benefits of port calls (yes/no), 9) changing mess hall (dining) procedures, 10) employing person under investigation (PUI) protocols, 11) isolating/quarantining, 12) removing from the ship if COVID-positive, 13) acquiring enough personal protective equipment (PPE), 14) increasing strict handwashing protocols and setting-up sanitizer stations, 15) berthing direct patient care personnel in lodging off of the ship when moored in the harbor (e.g., New York City), and finally when vaccines became available, 16) vaccinating/boosting prior to the next deployment.

**Conclusions:** The knowledge gained from this study expands our understanding of shipboard nursing in the provision of competent care regarding the suppression and transmission of infectious diseases while underway.

### 3C02: Instruments for Social and Cultural Environment Well-being Among Veterans: A Systematic Review

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**Introduction:** The shift from military service to civilian life can significantly impact veterans’ well-being, particularly in social and cultural environments. Employing tools designed explicitly for assessing this domain allows researchers, policymakers, and other stakeholders to effectively measure the impact of various interventions aimed at enhancing veteran well-being. This systematic review aims to identify, describe, and report on the psychometric properties of instruments that measure the social and cultural environment well-being and assess their clarity and applicability.

**Methods:** We searched MEDLINE, EMBASE, PsycINFO, AgeLine, PTSD Pubs, Sociological Abstracts and Social Sciences Abstracts databases from inception to July 7th, 2023, for studies reporting on the development or validation of an instrument to assess the social and cultural environment well-being of outpatient populations. We also reviewed reference lists of relevant articles to identify additional eligible studies. We used the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) to assess the risk

of bias in all eligible studies. The measurement properties of identified social and cultural environment well-being instruments were evaluated against the COSMIN criteria for good measurement properties. Three veteran partners reviewed and independently assessed the clarity and applicability of all relevant tools.

**Results:** Of 20,434 unique citations, we identified 14 eligible studies reporting on ten social and cultural environment well-being instruments. We assessed nine (90%) of the identified instruments and are currently assessing the remaining tool, which will be completed before the CIMVHR forum. We found evidence for sufficient structural validity for three instruments (33%) and sufficient internal consistency for one (11%). Our veteran partners assessed eight (80%) of the identified instruments and are currently assessing the remaining two tools, which will be completed before the CIMVHR forum. The four instruments that were developed in veterans or deployed soldiers, were found to be inapplicable for our specific domain. However, the Social Production Function Instrument that was developed in the general population was found to be promising by our veteran partners, who assessed it as very clear and somewhat applicable. This instrument may require revision to supplement its subdomains and needs to be validated in a veteran population to ensure usefulness.

**Conclusions:** This systematic review identified ten instruments, that may apply in part to the social and cultural environment well-being domain. Our findings suggest, that the Social Production Function Instrument was found to be the most applicable, but still requires augmentation, revision and validation in a veteran population to ensure applicability and robustness.

#### **4B02: Self-reported Workplace Hazards among Regular Force Personnel: Findings from the 2019 Canadian Armed Forces Health Survey**

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<sup>1</sup>Department of National Defence

**Introduction:** Military workplaces pose many occupational and environmental hazards. Efforts to prevent and mitigate exposure to those hazards are key to reducing the risk of negative health effects. Self-reported occupational hazards and experiences can prove useful to identify ways to support occupational health endeavours. This study assessed self-reported occupational hazards and personal perceptions of training related to workplace hazards in Regular Forces personnel using the Canadian Armed Forces Health Survey (CAFHS).

**Methods:** The CAFHS 2019 was administered by Statistics Canada in collaboration with the Directorate of Force Health Protection of the Canadian Forces Health Services Headquarters. Data collection occurred from January to June 2019 and a total of 13,065 Regular Force personnel completed the survey,

an overall response rate of 39.6%. Results were weighted to the 2019 Regular Force population and analyzed to produce stratified frequencies in the form of descriptive tables and regression analyses were conducted to assess relationships with demographic and occupational covariates.

**Results:** Overall, 41.1% of females and 60.1% of males reported being exposed to environmental hazards in their main military workplace. Exposure to hazards was significantly more common in the workplaces of junior non-commissioned members (69.9%) compared to all other ranks, and in Royal Canadian Air Force workplaces (67.8%) compared to all other commands.

Among all Regular Force personnel who reported exposure to any workplace hazard, the most common hazard was noise (83.1%), followed by engine emissions (65.5%), dust and fibres (60.2%), and chemicals (53.5%).

CAFHS 2019 respondents were also asked about the training they received for protection from workplace hazards. One in five females and males reported that they did not feel training was adequate to protect their health from workplace hazards. Opinions of inadequate training varied significantly by rank ranging from 12.1% among senior officers to 24.0% among junior NCMs and did not differ between those in the Air Force, Army, and Navy.

**Conclusions:** Occupational and environmental hazards are common in the military workplaces of CAF Regular Force personnel. This study found noise to be the most common workplace hazard. There is a substantial proportion of the Regular Force population who do not feel they have had adequate training to protect themselves from their workplace hazards. Prevention and mitigation strategies to address occupational hazards continue to be important for maintaining the health of the Forces. Additional studies of association are needed to understand risk factors and health outcomes associated with CAF occupational hazards.

#### **4B03: Cost/Risk/Benefit Analysis of RZV Vaccine for CAF Members 50+**

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<sup>1</sup>Defence Research and Development Canada

**Introduction:** Many military members seek the Shingrix® (Recombinant Zoster Vaccine, RZV) vaccine from the Canadian Forces Health Services (CFHS).

While in Canada, RZV is recommended for individuals 50 years of age or older without contraindications, different jurisdictions have different policies regarding funding shingles vaccination.

Currently, no jurisdiction is funding the vaccine starting at 50 years old, but Ontario, Prince Edward Island and Yukon are funding it starting at 65 years old.

Given the success of modelling efforts in support of the SARS-

CoV-2 vaccination, there was interest within CFHS in modeling-informed decisions for other immunization questions, including shingles.

The presented work leverages a model similar to one that was previously published for the general Canadian population, but uses a more detailed modelling approach that is better adapted to the CAF context. The primary aim is to present an overview of cost/benefit analysis of the RZV vaccine that were performed for 50+ years old CAF members.

**Methods:** The presented work is based on a model that uses a Markov model to perform an incremental cost-effectiveness ratio (ICER) analysis. Such an analysis evaluates the improvement on remaining individual quality-adjusted life years (QALY) per unit of incremental cost associated to the vaccine. The presented analysis uses a finer grained Monte Carlo simulation that is more applicable to CAF members.

**Results:** Various metrics, including the ICER, case and complication incidence reduction quantities, and the QALY improvement for the RZV vaccine are calculated for different scenarios over a range of values for selected input parameters, including the age of vaccination and the percentage of vaccine uptake. Of these metrics, the ICER can be compared to either a willingness to pay threshold or ICER values for other competing priorities, or it can be incorporated within a more complex prioritization framework. Results for two cases are of particular interest to this study, the first only considers the life years of CAF members while in service, the other considers after-service life years.

**Conclusions:** The cost, risk and benefits for the RZV vaccine were evaluated for the CAF members that are 50 years or older using Monte Carlo simulations and an ICER approach. Such method could be leveraged to evaluate other vaccines in a more systematic fashion and used as a metric within the prioritization framework that is deemed appropriate.

## 5B02: Novel Long-acting Anticoagulant Prevents Thrombosis while Maintaining Hemostatic Potential

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**Introduction:** Traumatic injuries result in systemic inflammation and increased circulating fibrinogen, which increases the risk of micro- and macrovascular thrombosis that contributes to secondary organ damage and venous thromboembolism (VTE) in service members. Fibrinogen circulates at 2-5 g/L and can increase to >10 g/L following injury. A potential approach to prevent post-injury VTE would be to mitigate the rise of

fibrinogen, maintaining concentrations within a range of 0.5-2.0 g/L. No therapeutic strategy exists to prevent hyperfibrinogenemia after polytrauma. We hypothesized that preventing the increase of fibrinogen after polytrauma would suppress thrombosis risk while maintaining hemostatic ability.

**Methods:** siRNA against swine or mouse fibrinogen was encapsulated in clinically-relevant lipid nanoparticles (siFibrinogen). Mice underwent a model of polytrauma and were then given varying doses of siFibrinogen, control siRNA, or no treatment. Fibrinogen was measured for 1 week via ELISA. To model post-injury VTE, the inferior vena cava (IVC) was ligated 2 days after polytrauma in a portion of the mice. Thrombus weight was measured 2 days after the IVC was ligated. To evaluate bleeding risk, Landrace/Yorkshire cross swine were given varying doses of siFibrinogen or control. After 1 week, they underwent a bleeding model of femoral arteriotomy. Blood loss was measured and coagulation analysis included rotational thromboelastography (ROTEM). Fibrinogen was quantified by western blot.

**Expected Results:** siFibrinogen prevented hyperfibrinogenemia after polytrauma. In treated mice, fibrinogen was significantly lower from 6 hours post-injury through the 7 day monitoring period. At 72 hours, there was <5% of normal values with all doses tested. Mice treated with siFibrinogen that underwent the post-injury VTE model had significantly reduced thrombus weight compared to control siRNA-treated animals. Among all siFibrinogen treated mice, 12/18 were completely protected from thrombosis, compared to 0/9 in the control group. Finally, there was no significant difference in blood loss between control and treated swine with the doses of siRNA tested that yielded fibrinogen concentration >0.4 g/L.

**Conclusion:** The rise of fibrinogen and the size of thrombi after polytrauma can be decreased via the administration of siRNA against fibrinogen without compromising hemostatic ability. siFibrinogen represents a promising novel target for VTE prophylaxis post-injury. This therapy has the potential to reduce secondary complications driven by micro- and macrovascular thrombosis after injury in service members.

## 5B03: Unveiling the Spectrum: Understanding Directed Energy Weapon Injuries and Military Healthcare Implications

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<sup>1</sup>Canadian Armed Forces

**Introduction:** Directed energy weapons (DEWs) belong to a class of weapons designed to transform electromagnetic energy into radiated energy, enabling the precise and focused delivery of power to a specific target. This classification encompasses high-energy lasers, radio-frequency devices,



and microwave weapons. The deployment of DEWs on the battlefield presents potential significant advantages, as they enhance precision and reduce collateral damage typically associated with conventional weapons. However, the introduction of these innovative weapons brings forth the anticipation of new medical and surgical injury patterns underscoring the urgent need to delineate DEW-induced injury patterns and their ramifications for military personnel both acutely and in terms of long term lasting health effects, including effects on future pregnancy. DEWs, unlike conventional weapons, can have subtler yet more profound long-term effects on the soldier.

**Methods:** This study entailed the first even detailed literature review to define the DEW associated injury profiles that could be experienced by soldiers in combat situations. By examining the possible nature of DEW-induced injuries, the aim is to empower health services groups with the knowledge to develop innovative personal protective equipment, deploy effective diagnostic methodologies, and implement targeted treatment interventions. Research librarians completed a literature review and then a team of military medical physicians reviewed and examined the papers that were selected for inclusion in the review.

**Expected Results:** Preliminary findings reveal diverse injury profiles including neurophysiological symptoms, thermal burns, ocular trauma, and when combined with conventional injury patterns create a unique medical situation both in terms of acute treatment and long term prognosis.

**Conclusions:** As militaries enter this era of novel weaponry, collaboration among researchers, medical experts, and defense strategists is paramount to navigate the landscape of DEW-associated health risks.

## 5C02: Quantifying the Relationships between Anthropometric Factors and Seat to Lumbar Transmissibility in Male and Female Operators during Seated Whole-body Vibration

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**Introduction:** CAF members are exposed to whole-body vibration (WBV) when operating military vehicles, which has been associated with low back injury. In particular, female military operators have shown higher incidence of low back injury. Seat to lumbar transmissibility (STLT) is the ratio of acceleration measured at the low back compared to the seat which can be used to quantify low back injury risk. Body composition is thought to be a contributing factor to WBV transmission. However, it is unknown whether the body composition determination method has an influence on STLT prediction. It would be preferable if more easily implemented estimation methods

such as the US Navy Seal formula could provide sufficient prediction of STLT compared to the gold standard of body composition assessment, dual energy x-ray absorptiometry (DEXA).

**Methods:** Nine males (29 +/- 6 yrs) and nine females (26 +/- 7 yrs) were exposed to vertical sinusoidal vibrations representative of military vehicles (0.25m/s<sup>2</sup> RMS acceleration at eight discrete frequencies from 1-15 Hz) while seated on a rigid seat placed on top of a hexapod robot. Accelerometers were fixed to the seat and the third lumbar vertebrae (L3) to measure acceleration. Body composition was estimated using the US Navy Seal method and measured using DEXA. STLT was calculated by dividing RMS acceleration at L3 by RMS acceleration at the seat. Relationships between anthropometric measurements, body composition, and STLT were examined separately for males and females using stepwise multiple linear regression models ( $p < 0.05$ ).

**Results:** Peak STLT occurred at 5Hz for both sexes. For males, seated height and body fat percentage were significant predictors of STLT. At 5Hz, the combination of seated height and US Navy body fat determination provided slightly more accurate STLT predictions ( $R^2 = 0.838$ ) than seated height and DEXA determined body fat ( $R^2 = 0.739$ ). There were no strong predictors of STLT at 5Hz from any of the anthropometric measurements for female subjects.

**Conclusions:** Peak STLT occurred at 5Hz, which is one of the dominant frequencies of vertical vibration experienced by armoured vehicle operators. In males, our findings indicate that the US Navy Method is an appropriate body composition method to predict STLT. Given that anthropometric factors such as body composition do not appear to provide accurate STLT predictions for women, posture effects such as sacral angle should be investigated to understand their potential influence on low back injury risk during WBV exposure.

## 5C03: How do Sex-based Anatomical Differences Impact the Apparent Mass Response to Seated Whole-body Vibration?

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**Introduction:** Vehicle operators in the Canadian Armed Forces (CAF) are exposed to seated whole-body vibration (WBV) while driving. Seated WBV is associated with musculoskeletal injuries (MSKI) such as back pain, with some studies showing that women are particularly at risk. To better understand the factors that contribute to MSKI risk and support CAF initiatives to improve military women's occupational health, it is important to determine how sex-based anatomical differences relate to biodynamic response to seated WBV. The biodynamic response to seated WBV may be quantified by calculating

apparent mass (AM). AM is a measure of impedance which characterizes the force-motion relationship to the body at the vibration input, wherein a higher AM may be indicative of higher spine compression and shear forces resulting in higher MSKI risk.

**Methods:** Seated on a rigid seat placed on top of a hexapod robot, 16 males ( $28 \pm 6$  yrs) and 15 females ( $26 \pm 9$  yrs) were exposed to vertical sinusoidal vibrations representative of what CAF personnel may experience in military vehicles (0.25 m/s<sup>2</sup> RMS acceleration at eight discrete frequencies from 1 – 15 Hz). Interactions with the seat were measured using a force-plate and pressure-sensing mat. Anthropometric measurements (hip, waist, and chest circumferences, height, seated height) were taken using a measuring tape and body composition measurements (overall and seated-region body fat mass, body fat %, lean mass, lean mass %, bone mineral content (BMC) and bone mineral density (BMD)) were determined using dual-energy X-ray absorptiometry. Relationships between anthropometric and body composition measurements, seat-contact area, seat pressures, and mass-normalized AM were quantified using stepwise multiple linear regression models ( $p < 0.05$ ).

**Results:** Peak AM occurred at 5Hz for both sexes, with males having greater AM at 5 Hz, and females having greater mass-normalized AM between 7 – 15 Hz. Across the range of frequencies, sex and anatomical measurements were significant predictors of AM. The strongest predictors for AM in males were lean mass %, BMC %, and seated height. The strongest AM predictors for females were hip circumference, chest circumference, and body fat %.

**Conclusions:** These findings show AM during seated WBV exposure may be best predicted using different anatomical factors between males and females. These findings indicate that more specific anthropometric factors beyond mass, height, and sex should be considered in vehicle seat designs to better accommodate sex-based anatomical differences, thereby reducing the effects of seated WBV and decreasing risk of MSKI to all CAF personnel.

## Poster Presentations

### P112: Identifying Risk Factors for Injury during Basic Training in the Canadian Armed Forces: A qualitative study

**Carlucci, Samantha, PhD<sup>1</sup>**; Laroche-Nantel, Raphaëlle, RD, MSc<sup>2</sup>; Giroux, Isabelle, RD, PhD<sup>2</sup>

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**Introduction:** There is evidence to suggest that rates of musculoskeletal (MSK) injuries are greater among those enrolled in basic military training compared to the general military population. Several individual and environmental factors

have been associated with the risk of injury, many of which are preventable and controllable. A better understanding of these factors can help prevent or mitigate injuries during basic military training. Consequently, the goals of this project were to examine (1) various risk factors for injuries and (2) perceived fidelity to principles of injury prevention during basic training at the Canadian Forces Leadership and Recruit School (CFLRS) in St-Jean-sur-Richelieu, Quebec.

**Methods:** Participants were 16 Officer and non-commissioned members (NCM) (50.0% male; 56.3% Officers) who recently completed basic training at CFLRS. Participants completed a short electronic survey and a semi-structured interview in the two to four weeks following graduation from CFLRS. They were asked to share their unique experiences, and the meaning of those experiences, with regards to injuries, nutrition, physical training, equipment and training environment, and support from leadership and staff/instructors.

**Results:** Responses were analysed using a priori themes. Insights were gained into the common causes of pain and injury (e.g., physical training, ill-fitting equipment), barriers to care (e.g., time constraints, stigma), and the staff/leadership's role in injury prevention and treatment during basic training. Participants also provided recommendations for mitigating injuries before and during basic training, including improved pre-enrolment fitness, increased attention to stretching and recovery, and enhanced injury prevention awareness.

**Conclusions:** This qualitative study serves as a valuable addition to previous research efforts, offering insights into the experiences of Canadian Armed Forces recruits regarding various risk and mitigation factors, and perceived fidelity, to principles of injury prevention during basic training. These insights may be fundamental not only in preventing immediate, short-term injuries, but also in mitigating the likelihood of long-term or chronic issues as military members progress in their careers.

### P116: Description of Canadian Armed Forces Personnel referred to Physiotherapy in 2023

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<sup>1</sup>Department of National Defence

**Introduction:** This study aims to describe physiotherapy referral statistics for Canadian Armed Forces (CAF) personnel in 2023. Physiotherapy plays a crucial role in maintaining the health and readiness of military personnel, making it imperative to understand the patterns and prevalence of referrals within this population.

**Methods:** The information was extracted using the Canadian Forces Health Evaluations and Record Outcomes (CFHERO) population health surveillance system, which integrates data from the Canadian Forces Health Information System (CF-

HIS) and other sources. Physiotherapy referral records from CFHIS were linked with the CFHIS Master Patient Index (MPI) including all CAF personnel serving between the dates of 01 January 2013 to 31 December 2023. The CFHIS MPI was used to enumerate the population at risk, Regular and Reserve Forces personnel who have received at least one physiotherapy referral record, as well as the component and health services eligibility status of personnel. Prevalence rate is presented as a proportion of personnel at risk who have had at least one physiotherapy referral in 2023. Anonymized data were analyzed to protect personnel confidentiality. Referrals completed on paper forms and scanned into CFHIS were not captured.

**Results:** In 2023, there were 29,465 physiotherapy referral records for CAF personnel. The prevalence of referrals was 20.6% among all personnel, with higher rates observed among those eligible for full-time CFHS coverage (31.0%). Anatomical locations with the highest referral frequencies were lumbo-sacral spine (18.1%), knee (14.1%), and shoulder (13.8). The most prevalent cause of injury was unknown (45.4%), sport and exercise (24.7%), and military and occupation (10.6%).

**Conclusions:** This evaluation study provides valuable insights into physiotherapy referral patterns among CAF personnel in 2023. Understanding the prevalence, anatomical locations, and causes of injuries leading to referrals can inform health-care planning and injury prevention strategies within the military context.

### **P125: An Informed Journey towards an Evidence-based Canadian Armed Forces Occupational Therapy Standard for Evaluating the Effectiveness of Home Modifications**

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<sup>1</sup>Departement of National Defence

**Program/Intervention Description:** Accessibility is not just a matter of convenience, but a fundamental right protected by both provincial/territorial and federal legislation. The Canadian Armed Forces (CAF) Home Modification Benefit (CBI-211.01) aligns with existing federal legislation by “reimbursing ill and injured member’s” modifications to their principal residence to meet their daily living requirements (Activities of Daily Living (ADL)/Instrumental Activities of Daily Living (IADL)). In fiscal year 2023-2024, the CAF approved a combined total of thirty-five home modifications in Edmonton, AB and Ottawa, ON. Seven of these were considered Major, or over \$5K. Home modifications, though time-intensive and expensive, facilitate safe, inclusive, and accessible participation in home environments and roles. Occupational therapist expertise is instrumental to address accessibility deficits that require medically justified home modification interventions. While occupational therapy reports are valued aspects of person-centered care, a

standardized, systematic and evidence-based process evaluating the impact of these interventions requires measurement.

**Evaluation Methods:** A literature review and consultation with experts in the field of home modification was conducted. A Plan Do Study Act (PDSA) cycle for quality improvement was implemented. Priorities for analysis of home modification outcomes in this CAF initiative were: 1) Safe mobility / transfers; 2) ADL/IADL Participation; 3) Member Satisfaction; and 4) Bilingual/ability to translate.

**Results:** Evidence-based outcome tools measuring these spheres were sourced and evaluated for their reliability, validity and utility. Four tools emerged: Post Modifications Satisfaction Questionnaire (PMSQ); Safety Assessment of Function and Environment for Rehabilitation (SAFER); The World Health Organization Quality of Life Assessment-Abbreviated (WHOQOL-BREF); and the Canadian Occupational Performance Measure (COPM). Preliminary trial of the tools has been initiated. Results trend positively for SAFER with a clinically significant change (Initial score 114 versus Discharge score 46) demonstrating its effectiveness in measuring person-centered care. Integrating home modification outcomes tools into occupational therapy standard practice aligns with directives to inform practice, policy, and educators.

**Conclusions:** Occupational Therapy in-home evaluations provide critical information about function, current home accessibility and injury risk. The Department of Defense has committed to supporting their ill and injured members through the Home Modification Benefit, an essential program that requires Occupational Therapy accessibility recommendations to ensure CAF members may live safely and independently within their homes. A standardized method for evaluating the effectiveness of home modifications interventions shall ensure these benefits are evidence-based, equitably applied and sustainable. Insights gained from this initiative may be applied nationally.

### **P148: Interventional Procedures for Chronic Non-cancer Spine Pain: A systematic review and network meta-analysis of randomised trials**

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**Introduction:** Clinicians frequently offer patients with chronic, non-cancer, axial or radicular spinal pain various interventional procedures. However, the comparative effectiveness and safety of available procedures remains uncertain.

**Methods:** We conducted a systematic review and network meta-analysis (NMA) to address the comparative effectiveness of interventional procedures for chronic non-cancer spine pain. We searched MEDLINE, EMBASE, CINAHL, CENTRAL, and Web of Science up to 24 January 2023. We included randomized trials that enrolled patients with chronic noncancer spine pain, comparing an interventional procedure versus another, a sham procedure, or usual care. Pairs of reviewers independently identified studies and extracted data. We conducted frequentist NMA and used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach to rate the certainty of evidence (CoE).

**Results:** Of 132 eligible trials, 81 trials with 7,977 patients that explored 15 interventional procedures were included in meta-analyses. All subsequent effects refer to comparisons with sham procedures. For chronic axial spine pain, epidural injection of local anesthetic (LA) (WMD 0.28cm a 10cm VAS [95%CI -1.18 to 1.75]), epidural injection of LA and steroids (WMD 0.20 [95%CI -1.11 to 1.51]), radiofrequency of the dorsal root ganglion (WMD 0.50 [95%CI -1.31 to 2.31]), and joint-targeted steroid injection (WMD 0.83 [95%CI -0.26 to 1.93]) probably result in little to no difference in pain relief (moderate CoE). Intramuscular injection of LA (WMD -0.53 [95%CI -1.97 to 0.92]), epidural steroid injection (WMD 0.39 [95%CI -0.94 to 1.71]), joint-targeted injection of LA (WMD 0.63 [95%CI -0.57 to 1.83]), and joint-targeted injection of LA with steroids (WMD 0.22 [95%CI -0.42 to 0.87]) may provide little to no difference in pain relief (low CoE); intramuscular injection of LA with steroids may increase pain (WMD 1.82 [95%CI -0.29 to 3.93]) (low CoE). For chronic radicular spine pain, epidural injection of LA and steroids (WMD -0.49 [95%CI -1.54 to 0.55]) and radiofrequency of the dorsal root ganglion (WMD 0.15 [95%CI -0.98 to 1.28]) probably result in little to no difference in pain relief (moderate CoE). Epidural injection of LA (WMD -0.26 [95%CI -1.37 to 0.84]) or epidural injection of steroids (WMD -0.56 [95%CI -1.30 to 0.17]) probably result in little to no difference in pain relief (low CoE).

**Conclusions:** Our network meta-analysis of randomized trials provides low to moderate certainty evidence that, compared to sham procedures, all interventional procedures for axial or radicular chronic noncancer spine pain provide little or no pain relief.

## MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

### Podium Presentations

## 1A01: The First 20 Years of the Canadian Armed Forces Recruit Health Questionnaire (2003-2023)

*Carlucci, Samantha, PhD<sup>1</sup>*

<sup>1</sup>Department of National Defence

**Introduction:** The Recruit Health Questionnaire (RHQ) was designed to assess a range of health determinants, and provide comprehensive baseline health information on Canadian Armed Forces (CAF) non-commissioned members and officer cadets (hereafter referred to collectively as “recruits”). The RHQ is an indefinite surveillance and research project, and thus data collection is ongoing. To commemorate its twenty-year anniversary, this study will highlight key trends from the past 20 years (2003-2023), and discuss possible implications and future directions of the RHQ.

**Methods:** The RHQ is administered on an ongoing, voluntary basis to Regular Forces CAF recruits in their first week of basic military training. A total of 60,792 recruits completed the RHQ between 2003 and 2023. The RHQ participants primarily consisted of Non-Commissioned Member (NCM) candidates (78.1%) and men (84.6%). The majority were under 25 years of age (61.4%).

**Results:** The RHQ examines four key aspects of health: health status and prevalence of health conditions, health behaviour, psychological disposition, and social environment. Some preliminary findings across these four areas included decreases in general health, acute injuries, cigarette smoking, alcohol use, and physical activity from 2003 to 2023. There were also increases in depressive symptoms, PTSD symptoms, and experiences of early childhood adversity over this timeframe.

**Conclusions:** Overall, recruits who enrolled in 2003 to 2023 had relatively favourable health profiles. There were improvements in some health behaviours and conditions, including decreased rates of cigarette smoking and alcohol use. However, there were also notable concerns, including an increase in symptoms of various mental health conditions and in the incidence of early childhood adversity. Continuing to assess and monitor the health-related factors in the RHQ can provide valuable information that can help identify candidates at-risk for health problems. The capacity of the RHQ to be linked with other sources of health or occupational information collected over the military career provides valuable information for guiding the development of future health promotion and prevention strategies.

## 2C05: Situational Assessment of the Strengthening the Forces Health Promotion Program

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<sup>1</sup>Department of National Defence; <sup>2</sup>Public Health Agency of Canada; <sup>3</sup>Canadian Forces Health Services Group

**Program/Intervention Description:** Strengthening the Forces (STF) is the primary health promotion program for the Canadian Armed Forces (CAF). It underwent a comprehensive situational assessment between 2018-2023. This assessment aimed to evaluate STF's effectiveness in optimizing the health, wellness, and operational readiness of CAF personnel. Three primary questions guided the assessment: What is the situation? What are current best practices and related gaps? What actions can be taken?

**Evaluation Methods:** A situational assessment was conducted using a mixed methods approach comprised of multiple lines of inquiry. Data were collected from CAF bases/wings across Canada through surveys, interviews, world cafés, focus groups, and document reviews. Evidence syntheses were conducted to identify best practices in health promotion. Thematic, metanarrative, and descriptive statistics analyses were performed enabling triangulation. Final interpretations were ascertained via a representative advisory committee.

**Results:** This assessment found that the STF program is based on a solid foundation of evidence and expertise, contributing to CAF health, wellbeing, and readiness. Opportunities existed to strengthen and modernize the program and enhance intersectoral collaboration. CAF health domains like injuries, healthy weights, substance use, and mental wellness remained significant concerns. Emerging issues included gaming, gambling, sleep, and chronic conditions. Health disparities across demographic groups highlighted the influence of the social determinants of health (SDOH) and the need for multi-level multi-component interventions. Results showed that resource limitations hindered program maintenance and expansion despite STF efforts. Stakeholders emphasized a need to extend beyond health education to other action areas (e.g., policy development, supportive environments). An unclear governance structure resulted in duplication and inefficiencies. There was also a call for enhanced data collection tools and timely surveillance systems to measure health promotion indicators for decision-making. Based on these findings, the following recommendations were proposed:

1. Invest further in health promotion and redistribute existing resources to priority health needs.
2. Modernize governance structures to streamline efforts, clarify roles, and enhance intersectoral collaboration.
3. Consider the SDOH, life course, upstream factors, and equity when developing health promotion initiatives.
4. Improve data collection, reporting, and utilization mechanisms to support action and decision-making at all levels of the organization.
5. Promote and facilitate a CAF health-in-all-policy approach that is a shared responsibility between all stakeholders

**Conclusions:** The situational assessment provided critical insights and recommendations to enhance the STF program's effectiveness. By addressing identified challenges and leveraging opportunities, the CAF can further enhance the health and well-being of personnel and strengthen operational readiness.

### 3A03: Royal Canadian Air Force Female and Woman Operational Pilot Aeromedical Study Update

*Thorgrimson, Joelle, MD<sup>1</sup>*

<sup>1</sup>Canadian Forces Health Services

**Introduction:** Females continue to remain a minority of Royal Canadian Air Force (RCAF) operational pilots equalling <2% in 2000 and <6% in 2022. Limited research has been completed on the unique experiences and needs of female and women operational pilots.

**Methods:** This hypothesis generating mixed methods epidemiological study involved semi-structured virtual audio recorded interviews with current RCAF members, who were ever operational female or women pilots. A community based participatory research approach was used throughout, including several community leaders, who served as advocates and liaisons between the study population and the investigators to ensure accountability to do no harm. Interviews included a medical questionnaire and medical records review, and were analyzed thematically, descriptively, and with Fisher's exact tests.

**Results:** 51 of 88 (58%) of RCAF operational female and women pilots from 15 different platforms with a wide range of ranks starting at captain volunteered to complete interviews. Mean time in the military was 20 years with a range from 8 to 41 years. Mean total flying hour estimation was 2400 hours with a range of 500 to 8500 hours. 82% of participants noted at least one piece of Aircrew Life Support Equipment (ALSE) not fitting properly resulting in 52% of this group having prolonged health impacts, predominately musculoskeletal. Most pilots had musculoskeletal issues with 35% resulting in an impaired ability to fly. Of this subset, 44% were placed on a medical category with the remainder being grounded or self-grounded. 56% of participants who were pregnant at least once, the majority felt they did not have enough information on occupational risks and hazards to make an informed decision about flying, felt their career was impacted by their pregnancy, and felt they were not given enough postnatal fitness information. Urination issues relating to flying, most of which resulted in chronic dehydration, were identified in 45% of pilots. Of this subset, 5% experienced serious medical sequelae including pyelonephritis and nephrolithiasis. Common lived experience themes included concerns surrounding female and woman specific medical care around issues like pregnancy and menopause.

**Conclusions:** This snapshot looks at sex and gender specific aeromedical experiences by RCAF female and women operational pilots which can be used to guide research, policy, training, and education to improve their aeromedical experiences specifically with ALSE, and female and women specific aeromedical health management. Optimization could help the military to recruit and retain pilots as well as all aircrew positions in general.

### 3B05: Measurement-Based Sleep Care in Veterans and Active-Duty Personnel

**Germain, Anne, PhD<sup>1</sup>**

<sup>1</sup>NOCTEM Health, Inc. (USA)

**Brief Description:** Sleep is a pillar of health, readiness, and resilience. Military occupations and missions inherently challenge sleep and circadian rhythms, and sleep disturbances adversely impact mental and physical health, increased the risk of injury, accidents, and mortality, and impedes performance. Poor sleep, including insomnia, is a risk factor for PTSD and several other psychiatric outcomes. However, insomnia is a modifiable risk factor that can be targeted with evidence-based behavioral strategies to optimize sleep as well as overall wellbeing, readiness, performance, and resilience.

**Patient Population:** Military service members and veterans as well as first responders.

**Results:** In this presentation, the speaker will detail how high-density measurement of sleep and daytime wellbeing is key in the personalization and delivery of evidence-based insomnia care. A case example of a US Marine presenting with insomnia, PTSD, and a history of TBI will be presented to illustrate how measurement-based care can yield rapid, significant, and sustainable improvements in sleep as well as in daytime symptoms of PTSD, depression, and anxiety. The implementation of digital technology can be used to provide measurement-based insomnia at scale.

**Conclusions:** Measurement-based care supports a high degree of precision and personalization of evidence-based insomnia care practices, and can support and enhance patient-provider engagement and clinical outcomes. Digital tools can facilitate and accelerate the implementation of measurement-based care at scale, and effectively reduce the burden of prospective, just-in-time measurement for both patients and providers.

### 4C01: Mental health Treatment Discontinuation among Canadian Military Personnel

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<sup>1</sup>MacDonald Franklin OSI Research Centre; <sup>2</sup>Western University; <sup>3</sup>McMaster University; <sup>4</sup>St. Joseph's Health Care, London; <sup>5</sup>McGill University; <sup>6</sup>Defence Research and Development Canada; <sup>7</sup>Department of National Defence

**Introduction:** Mental health problems are prevalent among Canadian Armed Forces (CAF) personnel. Despite ongoing efforts to promote help-seeking for mental health issues, treatment non-completion remains an overlooked issue in military settings. There is limited understanding of the reasons for treatment discontinuation among CAF personnel. Here, we sought to provide estimates of past-year mental health treatment discontinuation among active CAF personnel, common reasons for discontinuation, and the factors associated with treatment non-completion.

**Methods:** Data from a nationally representative, cross-sectional mental health survey of active CAF Regular (RegF) (n = 6,696) and Reserve Force (ResF) (n = 1,469) personnel were analyzed. Predictors of treatment non-completion were examined using a series of logistic regressions.

**Results:** Among RegF members, 20.8% sought mental health treatment in the past year. Of this subgroup, 38.4% discontinued all forms of treatment within the same year. Notably, only 26.6% of those who discontinued reported doing so because they had completed the recommended course of treatment. Similar patterns were found among ResF personnel. Among RegF members, higher education, being married/common-law, being a senior non-commissioned member, a history of childhood maltreatment, and lower social support were associated with an increased likelihood of prematurely stopping treatment from all providers. Common reasons for treatment discontinuation included "feeling better," "thinking it was not helping," and "not being comfortable with the approach."

**Conclusions:** This study highlights the complexities of military mental health services provision and offers the first nationally representative analysis of treatment discontinuation in a Canadian military population. This work offers insight into reasons for treatment discontinuation that may enable future initiatives designed to enhance treatment completion among active military personnel.

### 4E04: Impact of a Digital Clinical Decision Support Platform to Augment Insomnia Care Capabilities for Active Duty Service Members and Veterans

**Germain, Anne, PhD<sup>1</sup>; Wolfson, Megan, LCSW<sup>1</sup>; Espejo, Emmanuel, PhD<sup>2,3</sup>; Blue Star, John, PhD<sup>4</sup>; O'Reilly, Brian, DO<sup>6</sup>; Montari, Ryan, PhD<sup>5</sup>; Brock, Matthew, MD<sup>7</sup>; Markwald, Rachel, PhD<sup>2</sup>**

<sup>1</sup>NOCTEM Health, Inc. (USA); <sup>2</sup>Naval Health Research Center (USA); <sup>3</sup>Leidos, Inc. (USA); <sup>4</sup>Hanscom Air Force Base (USA); <sup>5</sup>Ramstein Air Base (Germany); <sup>6</sup>Madigan Army Medical Center (USA); <sup>7</sup>USAF, Wilford Hall Ambulatory Surgical Center (USA)

**Introduction:** Insomnia is the most prevalent sleep disorder among active duty service members (ADSMs) and veterans, and compromises readiness, performance, and health. Cognitive-behavioral therapy for insomnia (CBTI) is the recommended first-line treatment, but CBTI access and delivery is impeded by gaps between high patient demand and limited clinical capabilities. We evaluated the effectiveness of a digital clinical decision support (CDS) platform to overcome current CBTI capability gaps.

**Methods:** Behavioral healthcare providers (BHCPs) were offered access to a novel CDS platform (COAST, NOCTEM® Health, Inc) to monitor and manage patients they deemed appropriate for this CBTI delivery mode. The COAST platform consists of (1) a clinician portal to remotely monitor and manage patients' symptoms, progress, and adherence to algorithm-based, BHCP-approved treatment recommendations; and (2) a patient phone app to prospectively collect sleep diaries and displays BHCP-approved treatment recommendations (e.g., stimulus control, sleep restriction). The primary outcomes were treatment response (50% reduction in sleep latency [SL] or wake after sleep onset [WASO]; increase of > 10% in sleep efficiency [SE]) and insomnia remission (response & SL & WASO < 30 minutes with SE > 85%) at the end of treatment. The magnitude of changes in diary-based SL, WASO, and %SE as well as on the Insomnia Severity Index and Epworth Sleepiness Scale (ESS) from baseline to the final intervention was quantified using Cohen's *d* effect sizes.

**Results:** Nineteen BHCPs at 7 Air Force bases, 2 Naval hospitals, and 1 Army medical center utilized the platform with 245 ADSMs presenting with insomnia (M age = 32.6 + 8.0 y.o.; 27.3% women, 78% Sailors/Marines, 19% Airmen, 3% Soldiers). Average treatment duration was 5 ± 1 weeks, with an average clinician time of 9.5 + 15.0 minutes/week. The mean completion rate of diaries was 77% + 20%. Post-treatment, 83.5% of ADSMs met treatment response criteria and 70.3% met remission criteria. From baseline to the last intervention, clinically meaningful improvements in SL, WASO, SE, and insomnia severity were observed (all Cohen's *d* > .5). Sleepiness was slightly decreased after CBTI (*d* = 0.34).

**Conclusion:** Augmentation of CBTI capabilities among BHCP using a digital CDS platform is feasible and yields rapid and clinically meaningful improvements in sleep among ADSMs with insomnia. CDS-enabled services may facilitate the scalability of first-line insomnia management practices and multiply CBTI capabilities.

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### **6C01: Alcohol Screening and Brief Intervention Across the United Kingdom Armed Forces: Six years after implementation has alcohol use changed?**

**King, Kate, MPH<sup>1</sup>; Lightly, Daniel, PhD<sup>2</sup>**

<sup>1</sup>United Kingdom Defence Medical Services (UK); <sup>2</sup>King's College London (UK)

**Program/Intervention Description:** The use of alcohol is a persistent concern for military commanders because it predisposes to negative occupational, disciplinary and health outcomes. In 2016, the UK Armed Forces started a formalised population screening and brief intervention programme. This presentation reports the results of this programme, current alcohol use within the UK Armed Forces, and changes in alcohol use over the 6 years of available data.

**Evaluation Methods:** AUDIT-C data was collected at routine periodic dental inspection for regular serving members of the UK Armed Forces between January 2016 and December 2022 and entered into the primary care electronic health record. In 2023, Defence Health Digital extracted the AUDIT-C data along with variables such as age, rank, sex and service. Descriptive statistics gave insight into alcohol use in relation to service type, rank, sex and age. Logistic regression was used to identify factors associated with higher risk drinking.

**Results:** Male service personnel had higher average AUDIT-C scores (4.83) than females (3.88), and this remained the case within each of the other variables of service type, rank and age. Royal Navy and Royal Marine personnel had the highest overall AUDIT-C scores with male members of these services, on average, falling into the increasing risk category for AUDIT-C outcome. Officers reported higher AUDIT-C scores than other ranks. Personnel under 24 years had the highest AUDIT-C scores and reached the threshold for increasing risk from their drinking behaviours.

**Conclusions:** This is the largest study of drinking behaviour in the UKAF to date. Overall, drinking behaviour is low risk across almost all sectors of the UKAF with only Royal Navy and Royal Marine personnel, and those under 24, drinking in the increasing risk group. There have been significant changes in drinking behaviours between 2016 and 2022 with reductions in mean AUDIT-C score and binge drinking, as well as an increase in the proportion of non-drinking personnel, in almost all demographic groups. There has been more than 10% reduction in the proportion of people scoring 5 or more on the AUDIT-C (62.1%, 2016 / 51.4%, 2022). Higher risk drinking was associated with being male, in the Royal Navy or Royal Marines, being an officer, and being under 24 years of age. The UKAF report higher risk drinking compared to the UK general population.

### **6C03: The Military DrinksRation Study: A smart-phone app for changing alcohol use behaviours in the United Kingdom Armed Forces**

**King, Kate, MBChB MPH<sup>1</sup>; Lightly, Daniel, PhD<sup>2</sup>; Greenberg, Neil, PhD<sup>2</sup>; Fear, Nicola, PhD<sup>2</sup>**

<sup>1</sup>United Kingdom Defence Medical Services (UK); <sup>2</sup>King's College London (UK)

**Introduction:** Alcohol consumption is closely associated with military populations and existing literature shows that military personnel consistently drink at higher rates than civilian counterparts. In 2022, a protocol for the Military Drinks Ration study was presented to CIMVHR Forum. This presentation outlined how there is no evidence for the effectiveness of alcohol brief interventions in the serving military. The Drinks Ration app had been shown to be effective at reducing alcohol use in a help-seeking veteran group, and the Military Drinks Ration study hypothesised that, military personnel using the app would reduce their alcohol consumption, at day 84, compared to a control arm of usual care.

**Methods:** This study was a two arm randomised controlled trial comparing the Drinks Ration app with usual care. Participants were serving in the UK Armed Forces and recruited through periodic dental inspections, targeted communications, and military social media. Eligible participants scored 5 or more on the Alcohol Use Disorders Identification Test-C (AUDIT-C); showing an increased risk of alcohol related harm. Consenting participants were randomised in 2 participant blocks in a 1:1 ratio to ensure equal gender distribution. Data was collected on a range of drinking behaviours and wellbeing using validated surveys disseminated through the app or the REDCap research programme. The primary outcome measure was a change in alcohol units consumed per week between baseline and day 84 as measured by the timeline follow back method. Secondary outcomes were a change in AUDIT score, change in quality of life assessment, change in drinking motivations and app usability.

**Expected Results:** The study is currently ongoing but will have completed by summer 2024. Preliminary results will be presented at the CIMVHR Forum.

**Conclusions:** The Military Drinks Ration study aims to, for the first time, demonstrate the effectiveness of behavioural interventions in reducing alcohol consumption. This may lead to the app being integrated into UK Defence policies for managing and supporting military personnel seeking help for alcohol use.

## **7B02: Innovative Delivery of R2MR Stress Exposure Training: Testing how immersive haptic garments impact the human response to a virtual tactical training simulation**

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<sup>1</sup>Ontario Tech University; <sup>2</sup>Defence Research and Development Canada; <sup>3</sup>IFTech Inventing Future Technology Inc

**Introduction:** Virtual reality (VR) based training holds great promise to overcome challenges with real world testing such as cost, resource intensiveness, weather and need for repetition. Creating a sense of presence in VR based training has been heavily focused on visual and auditory sensory engagement. Tactile engagement in VR through the use of haptic stimulation has great potential to augment the sense of presence.

A military police skill and resilience development VR training environment was created that incorporated CAF Military Police (MP) skill development performance objectives. Road to Mental Readiness (R2MR) program principles for resilience and stress exposure training (SET) were incorporated. The scenario included haptic garment stimulation activation on the torso and upper arms provisioned by the ARAIG haptic garment.

**Methods:** Preliminary verification trials with 8 participants were trained in the use of a VBS3 virtual environment complementary to the training in theatre of operations during an MP checkpoint scenario that required engagement with hostile enemy combatants.

The participants were then fitted and calibrated with the ARAIG haptic stimulation garment. The garment consists of a compression shirt with muscle stimulation along with an exoskeleton with vibration and directional 7.1 sound.

During completion of the VR based training, physiological data was captured using the Zephyr bioharness and synchronised with VR and ARAIG data. Skill and resilience metrics were created using McGregor's Athena AI based Athena platform. The sequence was segmented in 36 distinct components and metrics were generated per segment.

**Results:** Haptic engagement in our VBS3 based VR training simulation environment for MP skill and resilience development in hostile deployments was impacted by 1) the degree of intensity of haptic engagement established during calibration with the haptic garment; 2) positioning within the VR based theatre of operation.

Compression shirt garment fit impacted by different body shapes and body types that can impact the effectiveness of abdominal and trapezius regions.

Forthcoming data analyses on physiological changes during haptic garment activation will be provided during this presentation.

**Conclusions:** Increased sense of presence within VR based training is key in supporting the CAF goals for resilience development and stress exposure training (SET). Such sensory enriched VR environments have great potential to be less maladaptive when compared to the real-world equivalent.



New strategies need development for haptic incorporation to ensure the level of response is at an appropriate level and will not result in maladaptive development due to low levels of sensory activation. Further trials are planned.

### **7B03: The Impact of Tailored R2MR Stress Exposure Training on Different Virtual Stressors**

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<sup>1</sup>Defence Research and Development Canada; <sup>2</sup>Canadian Forces Health Services Group; <sup>3</sup>National Research Council Canada

**Introduction:** Learning how to best manage responses to stressful environments is crucial in operational environments. As such, the Canadian Armed Forces (CAF) currently employs the Road to Mental Readiness (R2MR) program as its primary source of mental health, resilience, and stress exposure training (SET). Previous research has illustrated the desire of CAF personnel to increase SET in realistic conditions. Additionally, practicing arousal control training during stressful virtual reality (VR) scenarios has been previously demonstrated in CAF soldiers to promote optimal arousal states. Further, heart rate variability (HRV) can be leveraged as a key index to individuals' overall resilience profiles and how they vary across different types of stressors and workload levels. The objective of the current study is to identify the key features required for optimal application of R2MR coping strategies during immersive SET scenarios.

**Methods:** Defence Research Development Canada has partnered with the National Research Council to leverage their

bWell interactive and immersive VR platform and signal processing pipelines to deliver and monitor multisensory tasks. Here, we systematically evaluated cardiac vagal control and emotional responses during rest, reactivity, and recovery stages of performance. We measured perceived stress and workload as well as physiological responses (HRV, cortisol, facial expressions, pupil dilation) to different types of stressors (i.e., emotional, cognitive, physical) during adaptive cognitive-motor tasks in 15 civilian participants. Further, we examined the impact of applying different coping strategies following tailored training and live coaching from an R2MR educator.

**Results:** Preliminary results confirm that HRV changes in a particular stressor context were in line with the hypotheses from theoretical frameworks and correlated with perceived stress ( $r^2=0.34$ ,  $p<0.05$ ). Within the cognitive exercise, the results indicate that HRV decreased as the difficulty level increased, as hypothesized. However, differences were observed depending on individual ability to perform the task at the maximum level of difficulty. Due to the multifaceted nature of the task, we have continued data collection to systematically examine how different task emphasis can induce different physiological and behavioural profiles. Further, we are exploring how different R2MR coping strategies can best prepare the individual for unexpected stressors (data collection ongoing).

**Conclusions:** Findings from this preliminary study systematically characterize the physiological and behavioural responses to different types of virtual stressors. Such findings will help to inform how to best train relevant R2MR coping skills under the optimal level of simulated stress to ultimately maximize transfer and application of such skills to relevant operational environments.

**VETERANS**  
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**VÉTÉRAN(E)S**

# VETERANS

## HEALTH POLICY

### Podium Presentations

#### 4B01: Cancer Incidence in Canadian Armed Forces Members and Veterans Enlisted between 1976 and 2016: A retrospective cohort study

*Jones, Andrea, PhD<sup>1</sup>; Cousineau-Short, Daniel, MPP<sup>2</sup>; Galanakis, Chrissi, MSc<sup>2</sup>; Weiss, Deborah, PhD<sup>2</sup>; Hall, Amy, PhD<sup>1</sup>*

<sup>1</sup>Veterans Affairs Canada; <sup>2</sup>Department of National Defence

**Introduction:** The Canadian Forces Cancer and Mortality Study (CFCAMS) is an ongoing collaboration between the Department of National Defence (DND), Veterans Affairs Canada, and Statistics Canada. This study aimed to describe the risk of overall and type-specific primary cancers in male and female Canadian Armed Forces (CAF) Regular Force and Reserve Class C members and Veterans with a first enrollment between 1976 and 2016, including comparisons to the Canadian general population (CGP).

**Methods:** This retrospective population-based cohort study was conducted using individual-level linkages between DND administrative data and the Canadian Cancer Registry. Primary cancer diagnoses were ascertained from 1976 to 2017. Standardized incidence ratios (SIRs) and 95% confidence intervals (CIs) were calculated for males and females, and by service status, rank and history of international deployment or posting using age, year, and sex specific rates from the CGP.

**Expected Results:** During the study period, 8,035 primary cancer cases (20% female cases) were observed in the cohort of 245,850 (14% female) CAF members and Veterans. Compared to the CGP, overall cancer risk was lower in the cohort (SIR males: 0.91, 95% CI: 0.89 to 0.93; SIR females: 0.93, 95% CI: 0.89 to 0.98). This was especially evident in active duty members and to a lesser extent Veterans. For most type-specific cancers, the cohort had lower or similar risk compared to the CGP. However, risk of melanoma was elevated in the cohort (SIR males: 1.10, 95% CI: 1.01 to 1.20; SIR females: 1.30, 95% CI: 1.07 to 1.53) and in active duty members, Senior Non-Commissioned Members, Officers and deployers. Increased risk was also observed for lung and bronchus cancer in male and female Veterans and Junior Non-Commissioned Members (Jr NCMs), and male non-deployers; oral cancer in male Veterans; pancreatic cancer in male Jr NCMs; testicular cancer in male officers; and cervical cancer in female Jr NCMs and non-deployers.

**Conclusions:** This is the first population-based nation-wide study of incident primary cancer in CAF members and Veterans. The overall risk of primary cancer in CAF members and Veterans was lower than the CGP. However, an increased risk of

certain cancers was observed among CAF members and Veterans; and this varied by sex, service status, rank, and history of international deployment or posting. Findings are relevant to prevention, benefits and health services.

### Poster Presentations

#### P157: Building Evidence around Service-relatedness: An occupational trends analysis of Veterans' disability benefits applications with mapping to the scientific literature

*Hall, Amy, PhD<sup>1</sup>; Jones, Andrea, PhD<sup>1</sup>; Cowieson, Ali, BSc<sup>1</sup>; Ramsay, Gordon<sup>1</sup>*

<sup>1</sup>Veterans Affairs Canada

**Introduction:** Understanding how military occupations and work tasks may contribute to medical conditions is important for evidence based decision-making within Veterans Affairs Canada (VAC)'s Disability Benefits Program. This presentation describes a collaborative effort undertaken by VAC's Research Directorate and Central Operations Division's Strategic Initiatives Team. Our objectives were to summarize and compare occupational trends in applications to the VAC Disability Benefits program for three medical conditions with currently available scientific evidence on occupational links with these conditions. Opportunities for ongoing evidentiary review and implications for knowledge users are discussed.

**Methods:** Three conditions were chosen for review: carpal tunnel syndrome, epicondylitis, and breast cancer. For each condition, reports summarizing VAC disability benefits first applications received from April 2018 to December 2022 (carpal tunnel syndrome and epicondylitis) or April 2023 (breast cancer), including individual-level information on sex and application decision, were analyzed. Manual reviews of Military Personnel Record Resumes (i.e. service records) were conducted to extract military occupations for each individual file. Frequencies of military occupations were then summarized by medical condition and sex. These summaries were compared to a review of current epidemiological evidence on causal connections between military and/or civilian occupational characteristics by medical condition.

**Results:** Individuals applying for breast cancer were predominantly female (87%) while carpal tunnel syndrome and epicondylitis were predominantly male (73% and 80% male respectively). Of the occupations identified in the disability benefits applications trends analysis for carpal tunnel syndrome, five were comparable to occupations identified as high risk in the scientific literature: aviation technician group (90% male), marine technician group (100% male), administrative clerk group (27% male), supply technicians (51% male), and traffic technicians (62% male). For epicondylitis, cooks (62% male) were identified, and for breast cancer, the administrative

clerk group (100% female) was identified in both the benefits applications trends analysis and the scientific literature.

**Conclusions:** This trends analysis provides a signal of military occupations commonly linked to VAC disability benefits applications for carpal tunnel syndrome, epicondylitis and breast cancer. A review of the scientific literature identified other occupations that may be at risk of developing these medical conditions. This has implications for: 1) identifying military service connections in the context of VAC benefits, 2) outreach during transition from military service, and 3) CAF health protection and promotion activities. Areas meriting additional effort include data system development, expanded reviews of occupational evidence (e.g., duration spent in job, deployments, exposures) and considerations of equity-deserving groups.

### **P175: Contemporary Portrait of Canadian Veterans: Information from the 2021 Census**

*Poirier, Alain, <sup>1</sup>; Sweet, Jill, MSc<sup>1</sup>; Pound, Teresa, BSc<sup>1</sup>*

<sup>1</sup>Veterans Affairs Canada

**Introduction:** The 2021 Census was a key milestone for Canadian military and Veteran health research, as it sheds important light on the sociodemographic, economic, family and household characteristics of all Veterans living in Canada on Census Day, and it also set the stage for enhanced research and data on these populations.

**Methods:** In May 2021, for the first time in 50 years, the national census asked a question to identify Veterans of the Canadian Armed Forces (CAF) living in the country. Custom data tables were provided in beyond 20/20 for variables that were available and of interest. In this report, key areas were examined related to well-being and compared Veteran results by gender, and comparisons with the general Canadian population.

**Results:** There were 461,240 CAF Veterans living in Canada on Census Day (May 11, 2021). This accounted for 1.5% of the population of Canada aged 17 and over. There were many similarities between Veterans and other Canadians, however there were differences in some areas. For example, Veterans were older, with an average age of 61 vs 49. They were more likely to be married/common-law or to be living alone, to report an Indigenous identity and to have a total income of \$50,000 or greater. Veterans were less likely to have their income fall below the poverty line or below the low-income measure and to be unemployed but much more likely to report “always having difficulties” with activities of daily living when all compared to the general Canadian population.

The gender composition of Veterans was very different than that of Canadians, where 84% men+ and 16% women+ for Veterans, compared to 49% men+ and 51% women+ for Canadians. There were notable differences in some areas where women+ Veterans were more likely to identify as Indigenous,

be widowed, separated or divorced, have children and have post-secondary diploma, degree or higher when compared to men+ Veterans or their Canadian women+ counterparts.

**Conclusions:** Moving forward, this important data source will be used to produce updated annual estimates of the Veteran population. Alongside alternate data sources and various statistical methods, this information will help VAC better understand – and therefore better serve – Canadian Veterans and their families. It will be used to inform decision making and policy/program development.

### **P181: Prevalence of Chronic Musculoskeletal Pain among Active and Retired Military Personnel: A systematic review and meta-analysis**

*Raesi, Javad, PhD<sup>1</sup>; Reyes-Vélez, Julián, PhD<sup>2</sup>; Elgarf, Mohamed, PhD<sup>3</sup>; Isard, Roxane, MLIS<sup>1</sup>; Lund, Heidi, MLIS<sup>2</sup>; Shaw, Lynn, PhD<sup>1</sup>*

<sup>1</sup>University of Western Ontario; <sup>2</sup>Veterans Affairs Canada;

<sup>3</sup>Canadian Food Inspection Agency

**Introduction:** Chronic musculoskeletal pain (CMSP) may result from continuous exposure to physically demanding tasks and is a significant issue among military personnel. Investigating the prevalence of CMSP in this population is crucial for understanding the extent of the problem and informing prevention strategies. This review aimed to estimate the prevalence of musculoskeletal chronic pain among active and retired members of military forces and to characterize potential factors that could influence the frequency of musculoskeletal chronic pain.

**Methods:** A systematic review of published and unpublished studies was conducted (Registration Number: PROSPERO CRD42020153704). The databases searched were Embase, PsycINFO, and PubMed. We followed PRISMA and Joanna Briggs Institute (JBI) guidelines for this review. Covidence was used for data selection and review. Two reviewers screened articles at the title/abstract, and full-text levels. Quality assessment and data extraction were employed from the JBI Prevalence study's Critical Appraisal Checklist and Extraction sheet. We used a random-effects meta-analysis model. The pooled results and the corresponding 95% confidence intervals were presented. The proportion of the between-study variance to the total variance was quantified using the I<sup>2</sup> statistic.

**Results:** Of 1086 unique studies identified 11 met the inclusion criteria. The included studies were published between 2013 and 2022, with sample sizes ranging from 247 to more than 7.8 million participants. All included studies met at least 8 out of 9 criteria for Quality assessment (high quality). The included studies investigated CMSP among active (n=6), retired (n=3), or both active and retired (n=3) military personnel. The duration of chronic pain was defined as either more than 3 months (n=6) or more than 6 months (n=6). Studies reported pain due to arthritis (n=9), CLBP (n=10), and MSK pain (n=6). The pooled



prevalence estimates of arthritis, CLBP, and MKS were 0.19% (95% CI 0.05; 0.49), 0.41 (95% CI 0.22; 0.63), and 0.45 (95% CI 0.39; 0.62), respectively; however, there was a high level of heterogeneity ( $I^2 = 99\%$ ).

**Conclusions:** CMSP conditions are common among military personnel. However, the large heterogeneity in prevalence data needs further exploration of underlying sources of variation. Future research is required to assess pain outcome duration and sex to explain the between-study variability.

## HEALTH SERVICES

### Podium Presentations

#### 5D02: Mental Health-related Hospitalizations among Veterans and Non-Veterans Residing in Ontario: A retrospective cohort study

**St. Cyr, Kate, MSc<sup>1,2</sup>; Kurdyak, Paul, MD, PhD<sup>1,3,4</sup>; Smith, Peter, PhD<sup>1,5</sup>; Aiken, Alice B., PhD<sup>6</sup>; Cramm, Heidi, PhD<sup>2</sup>; Mahar, Alyson L., PhD<sup>2,3</sup>**

<sup>1</sup>University of Toronto; <sup>2</sup>Queen's University; <sup>3</sup>ICES; <sup>4</sup>Centre for Addiction and Mental Health; <sup>5</sup>Institute for Work and Health; <sup>6</sup>Dalhousie University

**Introduction:** Canadian Armed Forces and Royal Canadian Mounted Police Veterans are at increased risk of mental health (MH) disorders because of their unique occupational experiences. Serious MH concerns may result in the need for inpatient treatment at rates higher than the Ontario non-Veteran population. In addition, differences in occupational exposures and experiences may mean that rates of MH-related hospitalizations vary across key subgroups of Canadian Veterans, such as female Veterans and Veterans with fewer years of service. As such, the objectives of this research are to estimate whether the likelihood of MH-related hospitalizations in the first ten years of follow-up differed between Veterans and non-Veterans residing in Ontario, Canada: 1) overall; and by 2) sex; and 3) length of service.

**Methods:** We used routinely-collected administrative health-care data from the Canadian Institute for Health Information Discharge Abstract Database (CIHI-DAD) and the Ontario Mental Health Reporting System (OMHRS) to identify Veterans and age-, sex-, geography-, and income-matched non-Veterans in Ontario, Canada between March 18, 2002 and March 31, 2020. Fine-Gray competing risks regression models accounting for the risk of death were used to estimate the HR of MH-related hospitalizations within the first ten years of follow-up after completion of service. Models were stratified by sex and length of service.

**Results:** Among the 18,841 Veterans and 75,364 non-Veterans included in this study, Veterans had a higher adjusted HR (aHR) of MH-related hospitalizations than non-Veterans (aHR, 2.93;

95% CI, 2.61-3.29). Effects were stronger among females (aHR, 4.54; 95% CI, 3.34-6.17) than males (aHR, 2.72; 95% CI, 2.39-3.09). Veterans with fewer years of service had higher rates of MH-related hospitalizations than non-Veterans (e.g., 5-9 years aHR, 5.78; 95% CI, 4.27-7.83), while Veterans with 30+ years of service had a similar aHR compared to non-Veterans (aHR, 0.91; 95% CI, 0.63-1.31).

**Conclusions:** Rates of MH-related hospitalizations were almost three times higher among Veterans compared to non-Veterans but varied by sex and length of service. Female Veterans and Veterans with fewer years of CAF or RCMP service had higher rates of MH-related hospitalizations than Veterans overall, potentially indicating more severe MH illness. Efforts to understand how the unique occupational exposures and experiences of these subpopulations influence their mental health outcomes and healthcare-seeking behaviours may help identify opportunities for early intervention in community-based settings, potentially reducing the need for inpatient treatment.

#### 7C01: Understanding Aging in Place for Veterans and their Families: A scoping review

**Robitaille, Annie, PhD<sup>1,2</sup>; Starr, Emma, BSc<sup>3</sup>; Chiarelli, Ali, MSc<sup>2</sup>; Visintini, Sarah, PhD<sup>2</sup>**

<sup>1</sup>Perley Health ; <sup>2</sup>University of Ottawa; <sup>3</sup>McGill University

**Introduction:** Veterans often desire to remain in their homes as they age, but their military service may present specific challenges. Understanding how best to support Veterans' aging in place is crucial to ensure their well-being and quality of life. This scoping review investigates the existing evidence on aging in place for Veterans and their families. More specifically, we examined the current evidence regarding 1) services, programs, and best practices to support Veterans and their families aging at home, 2) factors that influence Veterans' ability to age in place, and 4) how best practices can be adapted to diverse Veteran populations (e.g., minority groups)?

**Methods:** A peer reviewed search was conducted on November 10, 2023, from inception in MEDLINE, Embase and APA PsycInfo via Ovid, as well as Ageline and CINAHL via EBSCO. No limits to language or publication date were applied. Search results were exported to Covidence, and duplicates were eliminated. Screening occurred in two stages by two members of the research team (abstract and title screening followed by full-text screening). An investigator and a research assistant independently extracted data from selected studies. Examples of extracted characteristics included country of study, study design, reporting of age, sex, gender, ethnicity, setting, type of program/service, sample size, and results.

**Results:** In total, 4781 studies were screened, and 71 studies ultimately included. The majority (86%) originated from the United States, with a limited number from Australia, Canada,

and the UK. Study designs varied, with 24% representing opinion pieces or program descriptions, 18% qualitative studies, and 14% cross-sectional studies. Some articles focused on specific programs promoting aging in place (e.g., home-based programs serving Veterans, day programs, respite care for care partners of Veterans, home-telehealth and in-home technology-based programs, home hospice services, caregiver support groups). Others explored general program improvement strategies (e.g., the importance of collaboration and trust). Additional studies investigated factors impacting Veterans' ability to age at home (e.g., access to services, lack of support, coordination of care).

**Conclusions:** Given the context- and system-specific differences for Veterans between countries, more Canadian studies are warranted. Further research is needed to explore equitable service access for minority Veterans and program scalability to diverse contexts. Collaboration, including between Veteran and non-veteran organizations, emphasizing trust and flexibility, is crucial.

### **7D02: Developing Clinical Practice Recommendations for Healthcare Providers Working with Veterans Living with Chronic Pain Through Expert Consensus**

*Williams, Ashley, PhD<sup>1</sup>; Held, Nicholas, PhD<sup>1</sup>; Richardson, Melissa, BSc<sup>2</sup>; Tam-Seto, Linna, PhD<sup>3</sup>; Cramm, Heidi, PhD<sup>2</sup>; Nazari, Goris, PhD<sup>2</sup>; Miller, Jordan, PhD<sup>2</sup>; Wolfrom, Brent, MD<sup>2</sup>; McKinnon, Margaret, PhD<sup>1</sup>*

<sup>1</sup>McMaster University; <sup>2</sup>Queen's University; <sup>3</sup>University of Toronto

**Introduction:** Canadian Armed Forces (CAF) Veterans experience chronic pain at nearly double the rate of the Canadian general population. After leaving service, Veterans access health services through civilian providers in public health systems who may be unfamiliar with their cultural and health needs. Canadian literature indicates there is concern about the civilian health system capacity to meet Veterans' needs. Veterans themselves have voiced concern about civilian clinicians' lack of military knowledge and understanding. Our objective is to address civilian clinician knowledge gaps by developing evidence-informed practice recommendations for working with Veterans who have chronic pain.

**Methods:** In this final phase of a larger project, we will use Nominal Group Technique (NGT) to refine and build consensus on practice recommendations we developed using findings from the earlier phases of the project (a systematic review and an interpretive description qualitative study). We will recruit 9-12 participants including Veterans living with chronic pain, clinicians who work with such Veterans, and researchers who study chronic pain among Veterans. The NGT will involve a series of online surveys and virtual meetings to refine and build consensus on practice recommendations. Prior to meeting, NGT participants will rate the importance of each recommen-

dation, via online survey, using a Likert scale. Consensus will be assessed using the method described by Allen et al. Recommendations without consensus will be discussed during the meeting and revised. After meeting, participants will be asked to rate the revised recommendations, which will again be analyzed for consensus. This process will continue until consensus on all recommendations is reached.

**Results:** We expect to have a set of practice recommendations rooted in evidence and expert consensus to improve civilian clinicians' military knowledge and cultural competence. These recommendations will be shared widely across Canada through outreach to relevant stakeholder organizations (e.g., Chronic Pain Centre of Excellence for Canadian Veterans, CIM-VHR, professional colleges/associations), social media, and authors' networks to maximize reach to clinicians and Veterans.

**Conclusions:** Military cultural competence is an essential skill for civilian healthcare providers who work with Veterans living with chronic pain. The practice recommendations will improve military cultural competence among civilian healthcare providers and, by extension, improve health service provision for Veterans living with chronic pain.

### **Poster Presentations**

#### **P161: Are Clients Ready for Measurement Based Care (MBC) Through Client-Reported Outcomes Monitoring Information System: Clinicians Perspective**

*Kaur, Barjinder, PhD<sup>1</sup>*

<sup>1</sup>Horizon Health Network

**Program/Intervention Description:** In 2013, Veterans Affairs Canada (VAC) launched CROMIS across the Operational Stress Injury National Network (OSINN) Clinics to assist staff in treating mental health concerns of Veterans and active RCMP. CROMIS is a secure web-based software, which includes different measures under one platform to capture clients' current mental state and/or functioning. In addition, it provides "just-in-time" feedback data to clinicians, which helps improve client outcomes and achieve treatment goals. The inclusion of CROMIS is also proving beneficial for program evaluation as well. CROMIS consists of several measures with Outcome Questionnaire (OQ45.2) as the primary measure that assist clinicians understand client's progress based on session-by-session feedback. Although CROMIS initiative has many benefits, it remains an under-utilized platform. The goal of this study was to identify some of the barriers experienced by clients' use of CROMIS.

**Evaluation Methods:** A questionnaire was given to clinicians at the Operational Stress Injury (OSI) Clinic, Fredericton which consisted of 10-items. Some items included timeline of clinicians' CROMIS use, client's participation in CROMIS, some reasons given by clients for declining or discontinuing CROMIS

and asking clinicians for suggestions to address the barriers in using the platform.

**Results:** The questionnaire was completed by 8 of 10 clinicians, who were either from psychology or social work. Their experience in using CROMIS ranged from 6 months to 11 years. The majority (75%) of clinicians indicated at least one client initially declined participating in CROMIS citing reasons such as lack of information about the platform, lack of benefit or purpose, too many questions to complete. Among clients who discontinued CROMIS during treatment, clinicians identified reasons provided such as no change in symptoms and feeling distress while participating.

**Conclusions:** This study identifies some barriers about clients' utilization of CROMIS. The information highlights the importance of clients' experiences regarding the value and efficacy of the platform. As part of their client's treatment, clinicians play a primary role in supporting and promoting CROMIS. To further improve and re-establish client's utility of CROMIS, some strategies followed could prove effective such as collecting their client's feedback about platform on an ongoing basis, reiterating the platform purpose and sharing the value it provides in treatment.

## PRIMARILY MENTAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1D02: ÉCRIRE POUR SE RECONSTRUIRE: Étude de la méthodologie de la Grande Cueillette des Mots dans le processus de rétablissement psychologique des militaires en transition, des Vétérans et de leurs proches

*Carignan, Marie-Eve, PhD<sup>1</sup>; Maltais, Danielle, PhD<sup>2</sup>; Wendell, Ney, PhD<sup>3</sup>; Séguin, Angèle, M.A.<sup>4</sup>*

<sup>1</sup>Université de Sherbrooke; <sup>2</sup>Université du Québec à Chicoutimi (UQAC); <sup>3</sup>Université du Québec à Montréal; <sup>4</sup>Théâtre des Petites Lanternes

**Introduction:** Le projet de cocréation artistique Monarques repose sur le besoin d'apporter un soutien aux Vétérans, aux proches et aux membres des forces régulières qui ont vécu ou qui vivent avec un état de stress post-traumatique ou une BSO. La méthodologie de la Grande Cueillette de mots, développée par le Théâtre des Petites Lanternes, permet de créer une pièce qui émerge de la parole citoyenne brute, recueillie dans des Carnets de Paroles complétés par les participants. Cette recherche vise à comprendre en quoi cette méthodologie contribue au processus de guérison et au mieux-être des populations concernées et participantes au processus d'écriture ainsi que de leurs proches.

**Méthodes:** Notre équipe a suivi le développement du projet et recueilli des données tout au long. Elle a participé aux

réunions du comité de pilotage, assisté à la rédaction des Carnets de Paroles, à la condensation de ces derniers, aux lectures de la pièce de théâtre ainsi qu'aux représentations. Elle a notamment analysé le contenu des Carnets de Paroles complétés par 210 Vétérans, leurs proches et des membres des forces régulières. Ces Carnets ont donné l'occasion aux participants de s'exprimer librement, dans un contexte confidentiel, et ont conduit à la création de la pièce de théâtre *Projet Monarques*, qui a été vue par plus de 8 000 personnes dans quatre provinces canadiennes. Notre équipe a également analysé plus de 250 questionnaires complétés par des répondants ayant participé au processus d'écriture des Carnets de Paroles ainsi que par les personnes ayant assisté à des représentations de la pièce, en plus de réaliser des entrevues semi-dirigées avec 15 Vétérans, militaires ou membres de leur entourage qui ont participé au processus d'écriture.

**Résultats:** Nos analyses démontrent que les personnes ayant complété un Carnet de Parole ont, dans une grande majorité des cas, fortement apprécié leur expérience et qu'elles considèrent que cela a été un exercice thérapeutique qui leur a permis de voir leur réalité ainsi que les traumatismes qu'elles ont vécus différemment, alors que la pièce a permis au public de mieux comprendre le vécu militaire et les stress associés.

**Conclusions:** L'évaluation du processus et des retombées d'une telle initiative culturelle est novatrice et unique au Canada. Cette recherche est donc une initiative importante pour mieux comprendre le rôle des arts sur la santé et le bien-être des populations, en particulier dans le processus de rétablissement psychologique des militaires en transition, des Vétérans de l'Armée et de leurs proches.

#### 1D03: Intensive Written Exposure Therapy with Police and Military Populations

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**Program/Intervention Description:** The Royal Operational Stress Injury Clinic aims to offer evidence-based treatments that are tailored to clients' clinical, cultural, and personal needs. Written Exposure Therapy (WET) is an emerging therapy to treat PTSD that was recently deemed a suggested treatment in the VA/DOD Clinical Practice Guidelines. As such, this treatment offers a unique opportunity to effectively treat PTSD with considerably fewer sessions than the standard recommended treatments. Specifically, research has shown that WET is as effective as Prolonged Exposure and Cognitive Processing Therapy, and has a reduced drop out rate.

Another developing trend in the evidence-based PTSD literature is the effectiveness of intensive (i.e., 2+ sessions per week) treatments. Given the nature of some OSIC clients' obligations

and schedules (shift work, court appearances, on-call work), along with the concise nature of WET, WET in an intensive format offers a unique opportunity for possible symptom reduction in as little as two weeks and only five appointments. Thus, this presentation will share the treatment outcomes of clients receiving individual WET in an intensive context and make suggestions on future implications.

**Evaluation Methods:** Client outcomes are measured in three ways. First, self-report questionnaires are administered to measure PTSD (PCL-5) and depression symptoms (QIDS-SR16) and overall functioning (OQ-45.2). These questionnaires are administered at the first, third, and fifth sessions, as well as 2 weeks post-treatment. Second, qualitative information regarding clients' opinions on the intensity and frequency of sessions and their overall satisfaction is collected. Third, service utilization is tracked to determine whether intensive WET was sufficient or if additional treatment was required. Descriptive statistics and qualitative analyses were used to evaluate client outcomes.

**Results:** This presentation will provide real-world evidence of the possible clinical utility and practicality of intensive WET for public service personnel and veterans. It is anticipated that intensive WET will result in reduced PTSD symptom severity, improved functioning, and quality of life at the end of treatment and at follow up. It is also expected that clients will endorse the feasibility of intensive WET, including that it improved their ability to access evidence-based care.

**Conclusions:** It is predicted that this presentation will demonstrate the effectiveness and tolerability of WET in a public safety population, and provide clinical rationale for the importance of further research of WET in an intensive format. This information will inform and possibly improve access to efficient PTSD treatments that work within the context of public safety personnel responsibilities.

## **2B01: Problematic Anger in a Canadian Military/Veteran Population: Prevalence, and Assessment and Treatment Implications**

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**Introduction:** Anger is a natural, adaptive emotion in the face of perceived threat or injustice. Yet, it can become maladaptive when it causes distress and undermines functioning. Anger has also been identified as culturally accepted and beneficial for functioning in military settings, and is a symptom of posttraumatic stress disorder (PTSD). Problematic anger is defined as "intense anger associated with elevated generalized distress and that interferes with functioning" (Adler et al., 2000). Evidence regarding the prevalence of problematic

anger in trauma-exposed military/Veteran populations is increasing. The present study sought to examine the prevalence of problematic anger and other psychological conditions in Canadian Veterans.

**Methods:** Participants include 1001 Canadian Armed Forces (CAF) and Royal Canadian Mounted Police (RCMP) personnel and Veterans who were referred to a specialized military/Veteran mental health clinic for an assessment between 2004 and 2021. Participants completed an intake questionnaire package, including measures of PTSD, depression, anxiety, alcohol use, problematic anger, as well as other demographic and military variables, at the time of admission to the clinic.

**Results:** The current study found that 57% of participants endorsed problematic anger, using the established cut off score of twelve or higher on the DAR-5. When examining symptom interrelationship, participants who endorsed problematic anger also endorsed higher levels of PTSD symptom severity and depression symptom frequency, and these relationships were statistically significant. The current study demonstrated a statistically significant relationship between problematic anger and male sex, lower age, being married or in a common-law relationship, having more children, and serving in a Regular Force capacity.

**Conclusions:** This is the first study to report on problematic anger prevalence and inter-relationship with other common mental health symptomatology in a Canadian military/Veteran context. The results of this analysis suggest that one in two Veterans endorsed problematic anger, and this rate of endorsement is higher than previously reported prevalence rates. Respondents who endorsed problematic anger had higher rates of clinically significant PTSD symptom severity and depression symptom frequency. Further, younger males, who were married with more children, had served in a regular force capacity and had a higher number of deployments experienced higher levels of problematic anger. This study is a starting point for better understanding risk and vulnerability factors for problematic anger in a Canadian military/Veteran sample, as well as the relationship between problematic anger and PTSD and depressive symptomatology. It is recommended that standardized screening of problematic anger will improve diagnostic precision, treatment planning and outcome.

## **2B02: Advancing Post-traumatic Stress Disorder Treatment in Military Populations: Harmonizing evidence, practice, and VA/DoD Guidelines**

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<sup>1</sup>MacDonald Franklin OSI Research and Innovation Centre; <sup>2</sup>Western University; <sup>3</sup>Clinique TSO du CIUSSS de la Capitale nationale; <sup>4</sup>St. Joseph's Health Care London; <sup>5</sup>Ontario Shores Centre for Mental Health Sciences; <sup>6</sup>Deer Lodge Centre; <sup>7</sup>Atlas Institute for Veterans and Families

**Introduction:** With PTSD affecting up to 1 in 5 military personnel, the need for effective, personalized treatment is paramount. Amid changes to the 2023 VA/DoD PTSD Clinical Practice Guidelines, our research Centre aims to develop a treatment algorithm for PTSD in military populations. This consensus-driven treatment algorithm integrates insights from a comprehensive meta-analysis and surveys of prescription patterns conducted within Canadian Operational Stress Injury (OSI) Clinic Network to ensure a broadened scope of treatment modalities in line with clinical needs.

**Methods:** Treatment algorithm development combines a series of successive studies, including a comprehensive meta-analysis evaluating the efficacy of psychotherapies, pharmacotherapies, alternative and combination therapies, followed by a nationwide survey of treatment preferences and patterns across Canadian OSI Clinics. A Modified Delphi approach is used to address gaps between clinical guidelines, findings from the literature, and practice insights.

**Results:** Our meta-analysis showed robust evidence for combination approaches above and beyond monotherapies (i.e., psychotherapies and pharmacotherapies) alone. Indeed, no significant differences emerged when comparing psychotherapies to pharmacotherapies overall. Meanwhile, the survey of prescription practices revealed diversity in assessment and a need for broader treatment options beyond those recommended in the current clinical practice guidelines. Findings highlight the nuances needed to account for patient-specific factors such as preferences, comorbidities, and medication interactions.

**Conclusions:** The 2023 VA/DoD Clinical Practice Guidelines reduced the number of recommended treatments while shifting treatment preferences and methods for evaluating PTSD care. In practice, these guidelines may pose challenges and restrictions by narrowing treatment options. Our integrated treatment algorithm, informed by Canadian OSI Clinic practices and emerging evidence both aligns with and expands upon these guidelines. We address trends and patient-centered care, highlighting a comprehensive spectrum of evidence-based treatments that enhance current clinical practices and deepen our understanding of military PTSD.

## **2B03: Navigating Prescription Patterns in Canadian Operational Stress Injury Clinics: An In-depth survey of post-traumatic Stress disorder treatment practices**

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**Introduction:** With a lifetime prevalence of military-related posttraumatic stress disorder (PTSD) ranging from 7.2 to 20%, understanding how Veterans are treated for PTSD in the Canadian Operational Stress Injury (OSI) Clinic Network is vital. This study aims to explore prescription patterns across 3 OSI clinics from 3 provinces, focusing on clinician preferences, decision-making processes, and patient characteristics in determining the pharmacotherapy treatments for military-related PTSD.

**Methods:** A comprehensive two-part survey was conducted among clinicians across various OSI Clinics. The first part assessed attitudes and perceptions surrounding prescription practices, while the second part tracked actual prescription patterns of patients with PTSD.

**Results:** A total of 24 clinicians across Canada participated in the surveys, and data was collected on 456 patients with PTSD. Key factors influencing prescription choices included drug tolerability, avoidance of side effects, patients' prior medication responses, and interactions with other medications/substances. Significant variations in PTSD assessment methods were identified, highlighting a practice gap. The chronicity of PTSD in the patient sample was an average of 8.5 years. Within the sample, over 69% were diagnosed with a comorbid mental health condition, and over 56% were receiving concurrent psychotherapy. The most frequently prescribed first-line medication was the antidepressant Sertraline. Further, 64% of patients were prescribed more than 2 medications. The analysis also showed distinct patterns of medications in treating patients with considerations for comorbidity and concurrent use of psychotherapy.

**Conclusions:** This research illuminates the complexity of prescription practices in Canadian OSI Clinics, identifying gaps and variability in treatment approaches for PTSD. Findings offer crucial insights for streamlining practices and personalizing treatment strategies for Veterans with PTSD. By revealing current practices and discrepancies in PTSD treatment across OSI Clinics in Canada, this study underscores the necessity for more uniform assessment strategies and tailored approaches, especially for those with chronic PTSD, comorbid physical and health conditions, and/or treatment-resistance. Future research also plans to replicate this method to explore patterns in psychotherapy practice. Together, insights gathered will pave the way for future policy and research developments to optimize treatment outcomes in military PTSD.

## 2B04: Exploring the Impact of Biological Sex on Intrinsic Connectivity Networks in PTSD: A Data-Driven Approach

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**Introduction:** Sex as a biological variable (SABV) may help to account for the differential development and expression of post-traumatic stress disorder (PTSD) symptoms among trauma-exposed males and females. Here, we investigate the impact of SABV on PTSD-related neural alterations in resting-state functional connectivity (rsFC) within three core intrinsic connectivity networks (ICNs): the salience network (SN), central executive network (CEN), and default mode network (DMN).

**Methods:** Using an independent component analysis (ICA), we compared rsFC of the SN, CEN, and DMN between males and females, with and without PTSD ( $n=47$  females with PTSD,  $n=34$  males with PTSD,  $n=36$  healthy control females,  $n=20$  healthy control males). Additional tests with clinical variables (i.e., PTSD and depression symptoms, childhood trauma scores) were performed in order to determine network connectivity characteristics specific to SABV. We also utilized machine learning classification models to predict the biological sex and PTSD diagnosis of individual participants based on network activation patterns.

**Results:** Our findings revealed differential within- and between-network connectivity patterns based on SABV and PTSD diagnosis. Males with PTSD exhibited increased intra-SN (i.e., SN-anterior insula) rsFC and increased DMN-right superior parietal lobule/precuneus/superior occipital gyrus rsFC as compared to females with PTSD. There were also differential network connectivity patterns for comparisons between the PTSD and healthy control groups for males and females, separately. Specifically, for the PTSD as compared to the healthy control group, there was increased SN rsFC with the left dorsolateral prefrontal cortex and increased CEN rsFC with the left anterior insula for females; inversely, there was increased SN rsFC with the right anterior insula for males. Importantly, we did not observe significant correlations between clinical measures of interest and aforementioned brain region clusters which displayed significant between group differences as a function of biological sex, thus further reinforcing that SABV analyses are likely not confounded by these variables. Furthermore, machine learning models accurately classified novel/

unseen participants according to both their biological sex and PTSD diagnosis based on ICN activation patterns.

**Conclusions:** This study provides novel evidence surrounding the significance of SABV on PTSD-related ICN alterations using data-driven methods. Our discoveries contribute to further defining neurobiological markers of PTSD among females and males and may offer guidance for differential sex-related treatment needs.

## 2B05: Implementation Lessons from a Massed Prolonged Exposure Program at an Operational Stress Injury Clinic

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**Program/Intervention Description:** The Royal Operational Stress Injury Clinic (OSIC) piloted a two-week massed Prolonged Exposure (PE) program, Massed Prolonged Exposure Program (MPEP). MPEP was adapted from the PE for PTSD in Intensive Outpatient Program (IOP) protocol. MPEP consisted of daily, virtual group and individual PE sessions and aimed to increase access to evidence-based PTSD treatment, utilize group therapy benefits, reduce dropout rates, and improve treatment outcomes within a condensed timeframe.

The preliminary results ( $n = 4$ ) showed clinically significant PTSD and depressive symptom reduction, improved overall functioning, and high satisfaction. Despite these encouraging findings, the translation of clinical research on the IOP protocol into effective clinical care in an OSIC was complicated by recruitment challenges and high clinical resource requirements. This presentation focuses on the lessons learned from MPEP implementation and comments on its practicality within an OSIC.

**Evaluation Methods:** Data on the number of clients screened and assessed to participate in MPEP, ineligibility and declination rates and reasoning will be reviewed to evaluate the need for future MPEP offerings. Client satisfaction surveys and clinician and manager interviews were conducted to gather qualitative feedback and possible program modification suggestions to enhance feasibility.

**Results:** Seventeen clients were contacted to participate in MPEP, eight were assessed and four proceeded to MPEP. The most cited reason for declining MPEP was timing (e.g., participant's personal schedule), followed by treatment intensity and group participation concerns. Results of the client survey suggested that those who participated in MPEP found PE, virtual and group delivery format helpful. However, they also reported some "internal" barriers (e.g., trust, speaking in a group) and that MPEP was "intense" and "draining" at times,

but manageable and necessary. Clinicians and management believed that MPEP offered a unique and rewarding experience for both clients and clinicians, but reported concerns with recruitment, clinical resources required, and difficulties balancing other clinical and administrative responsibilities.

**Conclusions:** The MPEP results are used to inform and improve OSIC program delivery to ensure clients are offered a range of evidence-based treatment options that best meet their needs. Currently, this includes preparing for a second pilot of MPEP in fall 2024 with plans to further expand with additional offerings, as needed. A discussion around the practicality of future offerings from the perspectives of clients (e.g., treatment outcomes, satisfaction), clinicians (e.g., caseload management, working to professional scope, group versus individual intensive treatment offerings) and managers (e.g., clinician time, referrals, flow of clients) will be underlined.

## **2C06: Mental Health Public Policy Work in the Veteran and Family Sector: Learnings from peer organizations and an environmental scan**

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<sup>1</sup>Atlas Institute for Veterans and Families

**Brief Description:** The mandate of our organization is to improve the mental health and well-being of military and RCMP Veterans and Families across Canada, in part, by influencing related public policies. In 2023, we were ready to formally explore that role. With engagement practices and principles at the centre of our work, we set out to connect and learn from peer organizations experienced in public policy in Canada through a stakeholder engagement project and a companion environmental scan of policies and policy recommendations related to mental health and well-being that affect Veterans and Families. This presentation will share the findings from this work.

**Patient Population:** The goal of the project was to provide our organization with information on best practices for public policy work, current public policy priorities of peer organizations, and to begin to map out existing policies and policy recommendations related to the mental health and well-being of military and RCMP Veterans and Families.

**Results:** The benefits from meeting with peer organizations were three-fold: 1) established a connection with peer organizations and built awareness about our mandate and intention related to influencing public policy; 2) gained insights from credible peer organizations with Canadian public policy experience; 3) we obtained a more robust understanding of the organizations working in the health and mental health space as it relates to Veterans and Families.

Qualitative and quantitative analysis of academic articles and grey literature included in our environmental scan provided insights into preliminary trends related to the topics of focus in current policies and policy recommendations, including how those themes correspond to the domains of well-being. The results of the environmental scan also provided more context for what our organization heard during the engagement sessions.

**Conclusions:** This presentation will highlight the key advice and recommendations shared by leading health, mental health, and Veteran-serving organizations in Canada as well as the trends in policies and policy recommendations as they relate to Veteran and Family mental health and well-being, which will be used to inform our organization's approach to public policy work..

## **2D01: Engaging Veterans with Lived Experiences of Post-traumatic Stress Disorder and their Families in Co-development Capacities**

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<sup>1</sup>The Atlas Institute for Veterans and Families

**Brief Description:** This abstract describes a framework created by the Atlas Institute for Veterans and Families aimed at involving Veterans and their Families in the development of mental health initiatives that address their needs in Canada. This evidence-based framework seeks to enhance the relevance and impact of these initiatives by improving stakeholders' ability to define current and emerging mental health needs. Its goal is to foster and support meaningful participation of Veterans and Families in shaping mental health agendas, and improve the applicability of research findings at clinical, community, and policy levels. The presentation will detail the development of the framework, highlight core engagement principles, and provide examples from Atlas Institute's experiences. This will help conference attendees understand effective strategies for engaging Veterans with lived mental health experiences and their Families.

**Patient Population:** The patient population targeted by the abstract is Veterans living with with mental health challenges, including posttraumatic stress disorder (PTSD) and other conditions, and their Families.

**Results:** By involving Veterans and their Families in the research process, the framework aims to ensure that research is more relevant to the actual needs of Veterans and Families, which can lead to higher mobilization of findings. Additionally, their active engagement is expected to lead to better health outcomes as the mental health interventions developed will be aligned with their needs. The framework provides guidelines on how to effectively engage Veterans and their Families in mental health research, practice, and policy developments,

promoting more meaningful and respectful involvement. By addressing current and emerging mental health priorities of Veterans and their Families, the framework thus aims to contribute to systems changes at clinical, community, and policy levels, enhancing the overall mental health system. Overall, the framework is designed to foster a collaborative environment where Veterans and their Families are key stakeholders in the co-creation of knowledge and solutions meant to address their mental health needs, leading to a more effective and sustainable Veteran and Family mental health care system in Canada.

**Conclusions:** The framework represents a strategic effort to integrate Veterans and their Families into the heart of mental health initiatives in Canada. Through this framework, the Atlas Institute aims to foster a collaborative environment where Veterans and their Families are central stakeholders in creating and implementing solutions that address their unique mental health challenges. This approach is expected to lead to a more responsive, effective, and supportive mental health system for Veterans and their Families.

### **2D05: Principles and Strategies for Co-creating Knowledge Products on Potentially Sensitive Topics in Virtual Environments with Veterans and Family Members**

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**Brief Description:** There is growing interest in meaningfully involving community stakeholders and end-users as equal and active partners in the development of studies, resources or services; an engagement technique known as co-creation. Co-creation is highly collaborative and often involves extended and intensive engagement. Although online or virtual environments can broaden opportunities for co-creation, they can also pose unique challenges, especially for projects involving potentially sensitive topics such as loss or violence. In such projects, these topics may be a source of discomfort or distress for both community members and those working with them, and there may be unique considerations when navigating them in virtual environments. There is limited practical guidance for engaging in co-creation when creating knowledge products ('resources') in these contexts.

The Atlas Institute for Veterans and Families knowledge mobilization team recently engaged two virtual advisory committees to co-create evidence-informed psychoeducational resources: one related to suicidality and the other on military sexual trauma (MST). This presentation will provide an overview of the team's co-creation processes, including opportunities and challenges. It will also describe the key guiding principles and strategies that were utilized to successfully engage community members in the virtual co-creation of these resources.

**Patient Population:** The target audience for the resources is Veterans and Veteran Family members. This presentation may be of interest to researchers and service providers who want to learn about co-creation on potentially sensitive topics and in virtual contexts.

**Results:** The engagement processes lasted an average of 10 months, involving eight online 1.5-2 hour Zoom meetings, in addition to a number of 'offline' tasks (i.e. those taking place outside of meetings).

Engagement for each project was guided by participatory design, strength-based and trauma-informed practice principles; for example, the importance of being inclusive, iterative and collaborative, building connection and trust, balancing power, prioritizing safety, and valuing individual and community capacity, knowledge and skills.

Through debriefs, the project leads identified six key strategies that facilitated the co-creation processes: (i) drawing on facilitator knowledge and comfort; (ii) making time for small talk and icebreakers; (iii) establishing a shared purpose; (iv) setting ground rules and structures; (v) prioritizing comfort and capacity; and (vi) demonstrating care and empathy.

**Conclusions:** Participatory design, trauma-informed and strengths-based principles may be useful for guiding co-creation with Veterans and Family members. Certain strategies can facilitate the process, particularly for resource development projects on potentially sensitive topics, such as suicide and MST, and in virtual or online contexts.

### **3C01: Once a Soldier, Always a Soldier: The Effect of Identity Loss on Mental Health and Well-being Following Military Discharge**

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<sup>1</sup>Flinders University (Australia); <sup>2</sup>Military and Emergency Services Health Australia (MESH); <sup>3</sup>University of Tasmania

**Brief Description:** A recent interim report from the Australian Royal Commission on Veteran Suicide has suggested that transition-related losses (loss of purpose, identity, and culture) are impacting veteran mental illness and suicide risk (Royal Commission into Defence and Veteran Suicide Interim Report, 2022). Subjective Loss of Self Theory posits that significant life transitions can cause a range of changes to group memberships, relationships, and roles and consequently can disrupt our sense of self. The extent of these disruptions leads to a subjective feeling of a loss as to who one was (past self) or will become (future self), creating a vulnerability to mental health and well-being difficulties.

**Patient Population:** Two cross-sectional correlational studies investigated the relationship between Subjective Loss of Self



(Past and Future) and mental health and well-being in 171 American military veterans (Study One) and 371 Australians recruited online.

**Results:** Both studies demonstrated that greater loss of past self was significantly related to increased mental illness symptoms, while greater loss of future self was significantly related to both increased mental illness symptoms and decreased well-being. In Study One, a negative discharge experience was significantly positively correlated with loss of past and future self, mental illness symptoms, and decreased well-being. In Study Two, the aforementioned relationships were either partially or fully mediated by discharge-related institutional betrayal, as measured by an adapted Institutional Betrayal Questionnaire.

In Study One, 270 of 371 participants provided voluntary qualitative data regarding their military discharge experiences. Thematic analysis is still underway.

**Conclusions:** Though these studies are correlational, they support the notion that transition-related identity losses are associated with veteran mental health and well-being challenges and give merit to Subjective Loss of Self as a Theory and as a useful scale to examine this phenomenon across different military populations. Further, the findings suggest that the quality of a veteran's discharge experience, particularly in cases of institutional betrayal, may be influential in either exacerbating or mitigating self-continuity challenges and associated mental health and wellbeing difficulties. Considering transition-related difficulties through the lens of Subjective Loss of Self Theory enhances the empirical breadth of the complex factors affecting mental health and wellbeing during discharge.

### 3C04: Instruments for Measuring Social Integration Among Veterans: A Systematic Review

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<sup>1</sup>McMaster University; <sup>4</sup>The Chronic Pain Centre of Excellence for Canadian Veterans

**Introduction:** Military veterans face many challenges post-deployment, including social integration. Understanding and accurately measuring social integration is critical to understanding the needs of veterans, and the impact of interventions aimed at enhancing their wellbeing. We conducted a systematic review to identify instruments that measure social integration and assess their clarity and applicability to veterans.

**Methods:** We updated the systematic review by Cordier et al., which addressed a similar objective, and identified instruments that measure social inclusion from inception to 2015. We searched MEDLINE, Embase, PsycInfo, CINAHL, and ERIC

databases from 2015 to October 2, 2023, for studies reporting on development or validation of an instrument assessing social integration. We used the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) to assess risk of bias of all eligible studies. The measurement properties of identified social integration instruments were evaluated against the COSMIN criteria for good measurement properties. Three veteran partners independently reviewed and assessed the clarity and applicability of all relevant tools.

**Results:** Of 8,536 unique citations we identified 44 eligible studies reporting on 25 social integration instruments. We included seven studies reporting on seven instruments from the previous review, totalling 51 included studies reporting on 32 social integration instruments. We found evidence for sufficient structural validity for 16 (50%), sufficient internal consistency for 22 (69%), sufficient cross-cultural validity/ measurement invariance for one (3%), sufficient reliability for seven (22%), sufficient criterion validity for one (3%), and sufficient hypothesis testing for construct validity for 19 (60%). Our veteran partners have assessed 25 (78%) of the identified instruments and are currently in the process of assessing the remaining seven tools, which will be completed prior to the CIMVHR forum. Among the 25 instruments assessed by our veterans, our veteran partners identified the Strathclyde Citizenship Measure (SCM) as very clear and very applicable to veterans. The Veterans' Social and Community Participation Assessment (VSCPA) was the only instrument developed and validated for veterans. Our veteran partners rated VSCPA as "somewhat clear" and "somewhat inapplicable" due to the instrument missing important factors related to military mindset and culture.

**Conclusions:** This systematic review identified 32 social integration instruments, among those reporting strong psychometric properties and assessed by our veteran partners, SCM seems most promising. The VSCPA may require augmentation, such as the addition of military mindset and culture items to better capture the social integration of veterans.

### 4A01: Towards an Expert-driven Consensus Framework of Potentially Morally Injurious Events and their Impacts: An e-Delphi study

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**Introduction:** Moral injury (MI) is highly relevant to military and Veteran mental health, with consistent associations demonstrated with post-traumatic stress, depression, and suicidality. However, lack of clarity regarding what defines

potentially morally injurious events (PMIEs) and their core impacts continues to hinder our understanding of the construct's true utility. This e-Delphi study aims to develop consensus surrounding key defining features of PMIEs and their impacts, establishing an expert-driven framework upon which rigorous empirical evaluation of PMIEs and their impacts can be executed.

**Methods:** The e-Delphi method is a rigorous, online, expert-driven framework for consensus-building. Round 1 consisted of open-ended questions seeking experts' perspectives on defining features, characteristics and consequences of PMIEs. Content analysis of Round 1 responses informed the development of Round 2 survey statements (closed-ended questions with optional opportunities for written feedback). Round 2 responses are being analyzed. Responses will be summarized and shared in Round 3, whereby participants will review and re-evaluate their agreement for refined statements. Rounds will continue until consensus is reached, defined a priori as 80% agreement across experts.

**Results:** Twenty experts from Canada, the UK, USA, Netherlands and Australia with a diverse range of expertise in military/Veteran wellbeing (i.e., psychiatry, psychology, counseling, theology, chaplaincy, social services, individuals with lived experience of PMIEs) completed two survey rounds. Based on Round 1 responses, 65 survey questions (i.e., Likert-scale, card-sort and rank) were developed, which assessed particular defining features of PMIEs, comparison of PMIEs and traumatic events, PMIE impacts, consequences of MI, processes & mechanisms, and risk and protective factors.

Round 2 responses showed high level of agreement ( $\geq 80\%$  consensus) for particular defining features of PMIEs, including the high-stakes nature of PMIEs, exposure pathways (i.e., acute, chronic, cumulative) and for various aspects of morally transgressive acts (e.g., type of transgressive act, type of personal involvement). Core impacts central to MI were also identified. Nuances to be explored in Round 3 will include: the role of betrayal and perceptions of blame in PMIEs, individuals' subjective responses to PMIEs, PMIEs vs. traumatic events, and the spiritual, cognitive and biological impacts of PMIEs.

**Conclusions:** High initial agreement across our diverse expert panel suggests a shared understanding of several key defining features of PMIEs and MI. Continued exploration of important nuances brought forth by participants will refine the conceptual framework to be developed. The resulting framework will include a research agenda aiming identifying key future areas of study and implications for military and Veteran wellbeing.

#### **4A03: Exploring Perceptions of Family Functioning in Moral Injury: Associations with positive and adverse mental health outcomes in a longitudinal sample of Veterans**

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**Introduction:** Exposure to potentially morally injurious events (PMIEs) has demonstrated associations with negative psychological sequelae among military members and Veterans, most notably depression and posttraumatic stress disorder (PTSD). Yet research is needed to better understand the mechanisms of this relation. Perceived family functioning has been associated with both moral injury (MI; Williamson et al., 2021) and mental health outcomes (Hall et al., 2021) among Veterans. Given that family functioning could serve as a treatment target to facilitate positive mental health following PMIEs, it is important to better understand the role of family functioning within the relation between MI and mental health.

**Methods:** Data were drawn from a large 18-month, 7-time-point longitudinal survey of Canadian Veterans. For the purposes of this analysis, complete responses were used from the first three timepoints across a 6-month period ( $n = 205$  Veterans) to assess how perceptions of family functioning (Family Assessment Device; FAD) may mediate the association between MI (Moral Injury Outcome Scale; MIOS) and three mental health outcomes of interest: positive mental health (Mental Health Continuum; MHC-SF), PTSD (Posttraumatic Stress Disorder Checklist-5; PCL-5) and depression (Patient Health Questionnaire-9; PHQ-9). Separate mediation models for each outcome were conducted including MIOS at baseline, FAD at 3 months, and mental health outcomes at 6 months. Covariates included gender, marital status, living arrangements, parental status, and presence of caregiving responsibilities.

**Results:** Overall models tested were significant ( $R^2$  range = .47-.54,  $p < .05$ ), with additional variance explained by the inclusion of FAD. MI significantly predicted FAD, with factors of living alone, not having children, and presence of caregiving responsibilities also being significant;  $ps < .05$ ). These same covariates were significant for total and direct pathways in the PCL-5 model (all  $p < .05$ ). A small, significant effect was observed for the mediating effect of FAD between MI and MHC (indirect =  $-.093$ ,  $SE = .039$ , 95%CI:  $-.018$ ,  $-.026$ ). No indirect effects were observed for PCL-5 or PHQ-9. Regression results showed lower age, shorter length of service, and lower rank were associated with increased MIOS.

**Conclusions:** Results suggest significant associations between MI and negative perceptions of family functioning, which may be more pronounced for Veterans living alone, with no children, and those with caregiving responsibilities. To our knowledge this is the first study to examine MI in relation to positive mental health (i.e., flourishing), with results suggest-

ing mild influence of family functioning as mechanism for positive mental health among Veterans experiencing MI.

#### 4A04: Moral Injury and Suicide Ideation in Male Veterans and First-Responders: Investigating the Potentially Mitigating Role of Positive Psychological Factors

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**Introduction:** Over the course of their careers, Veterans and First-Responders (VFR) are commonly exposed to experiences that violate their belief systems and negatively impact their psychological well-being, resulting in Moral Injury (MI). MI is significantly associated with suicide ideation (SI), suicide behaviour (SB), and risk for death by suicide. This study responds to the need for research investigating the role of positive psychological factors in potentially reducing the negative impact of MI on suicide risk among VFR.

**Methods:** Men over the age of 50 were recruited to participate in online Meaning-Centered Men's Groups (MCMG) for VFR facing release, retirement, or leave from their public safety service. Participants completed an online eligibility assessment with trained interviewers, consisting of a demographics questionnaire, screens for cognitive impairment, substance misuse, SI, SB, and mental disorders, and validated measures of trauma history, MI, and positive psychological factors. Zero-order correlations and linear regression analyses were employed to assess associations among MI, SI, and the positive psychological factors, and the role of the positive factors in mitigating the association between MI and SI.

**Results:** Participants in this on-going study included 41 male VFR ( $M=57.3$  years of age,  $SD=4.8$ , Range: 50-69) facing career transition. Nine participants (22%) scored at or above a cut-score suggestive of moderate or higher severity SI, and 7 reported a lifetime history of SB. MI was associated positively with SI ( $r=.46$ ,  $p<.01$ ) and negatively with life satisfaction ( $r=-.44$ ,  $p<.01$ ). SI was negatively associated with life satisfaction ( $r=-.61$ ,  $p<.001$ ) and reasons for living ( $r=-.38$ ,  $p<.05$ ). Participants who reported a lifetime history of SB scored significantly higher on MI ( $t(39)=-2.39$ ,  $p=.02$ ) and SI than those who did not ( $t(39)=-7.11$ ,  $p<.001$ ). Regression findings indicated that MI was significantly associated with SI, controlling for participant age and cognitive functioning ( $R^2=.23$ ,  $\Delta R^2=.23$ ,  $F(1,37)=10.72$ ,  $p=.002$ ); prediction of SI improved following inclusion of the positive psychological factors ( $R^2=.44$ ,  $\Delta R^2=.22$ ,  $F(3,34)=4.48$ ,

$p=.009$ ). Life satisfaction mediated the association between MI and SI (Sobel's  $Z=2.34$ ,  $p<.02$ ).

**Conclusions:** Moral injury and suicide ideation were positively associated among male Veterans and First-Responders facing career transition; this association was significantly mediated by life satisfaction, the cognitive component of subjective well-being. These findings were limited by sample size considerations, cross-sectional analysis, and self-reported SI and history of SB. Researchers are encouraged to consider the role of positive psychological factors when assessing and seeking to ameliorate MI and suicide risk among VFR facing key life transitions.

#### 4C02: "My Lifeline is Gone": A Qualitative Exploration of the Experiences of Veterans Following the Loss of their Psychiatric Service Dog(s)

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**Introduction:** Veterans diagnosed with PTSD are increasingly acquiring psychiatric service dogs (PSD) to assist in alleviating PTSD symptoms. PSDs are trained to perform specific tasks unique to the handler to aid in daily functioning. The human-animal bond plays a key role in the veteran-dog relationship. Because dogs have a short life span, veterans with a PSD will inevitably experience a loss and possible accompanying grief that may repeat if they acquire more PSDs over time. The nature of the loss and intensity of the grief experienced may require specific mental health supports attuned to the human-animal bond, PSDs and unacknowledged or disenfranchised grief.

**Methods:** An exploratory qualitative study was used to understand veterans' experiences of the loss of their PSD, grief, and the impact of this loss on their daily functioning. Four veteran participants who had lost their PSD within five years prior to the start of the study were recruited through two administrators in two provinces who were directly involved in a veteran-run service dog organization. Data collection involved in-depth individual interviews followed by inductive thematic analysis of transcript data. Three levels of coding contributed to the development of a grief cycle theoretical model that expands upon the human to human model found in the literature.

**Results:** Four key themes emerged from the data that highlight the complexity of the participants' relationships with their PSD such that the loss of their PSD, sudden or anticipated, was experienced as losing a critical lifeline. Grief was experienced from both the loss of an instrumental and vital support in daily functioning and a family pet. The loss, layered with grief, negatively impacted the veteran participants' quality of life and emotional state, including their reported decreased

ability to manage their PTSD symptoms. A cycle of grief related to the loss was experienced that at times intensified with the introduction of a new PSD.

**Conclusions:** Veterans with PSDs are often connected with a variety of service providers. It is suggested that these services may need to increase their awareness and understanding of the significance of the veteran-PSD relationship and the impact of such a loss on the veterans. This should include validation of the grief that may be experienced and ways to memorialize the relationship and support the continuing bond after the loss. Service dog organizations should consider how temporary foster dogs could be an integrated support for a veteran following the loss of the PSD.

#### **4D02: Does Armed Forces Experience Influence Promotional Opportunity for Corrections Officers? Exploring Perceptions of Veteran Experience in Post-military Employment in Corrections**

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**Introduction:** Following their military careers, many veterans pursue alternative employment in operationally related fields. Correctional services appear to employ many (approximately 20-25%) correctional officers with an armed forces background. Thus, recognizing the space of prison as that of the armed forces to civilian transition for veterans, we explore how and whether experience in the Canadian Armed Forces (CAF) is associated with promotional opportunities in a correctional service, as experienced or observed by CWs with and without CAF experience.

**Methods:** In the current study, we conducted open-ended surveys using Qualtrics with correctional officers under the employ of correctional services in Canada, of which some had previous experience under the employ of the CAF. Data are analyzed qualitatively and quantitatively, largely using descriptive statistics and thematic analysis.

**Results:** The most emergent theme explored through a semi-constructed, semi-grounded approach, is that armed forces experience facilitates promotion (i.e., occurs sooner for Veterans and prepares them for the job) in correctional services. The armed forces experience appears to reskill for success in correctional service work. However, some participants opposed this prevailing sentiment, feeling armed forces experience could hinder promotion, particularly when mental health concerns were salient, suggesting mental health stigma remains dominant.

**Conclusions:** The seemingly contradictory findings are unpacked to explore the ability of armed forces personnel to transition with success to correctional work.

#### **4D03: Instruments for Measuring Financial Well-being Among Veterans: A Systematic Review**

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**Introduction:** Assessment of financial well-being is critical to understanding the needs of veterans, and the impact of interventions provided to enhance their well-being. We conducted a systematic review to identify instruments that measure financial well-being.

**Methods:** In accordance with the guideline of Preferred Reporting Items for Systematic Reviews and Meta-Analyses, we searched MEDLINE, EMBASE, PsycInfo, AgeLine, PTSD Pubs, Sociological Abstracts, Social Sciences Abstracts databases from inception to April 13, 2023, for studies reporting on the development or validation of an instrument to assess financial well-being. We used the Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) to assess risk of bias of all eligible studies. The measurement properties of identified financial well-being instruments were evaluated against the COSMIN criteria for good measurement properties. Three veteran partners reviewed and independently assessed the clarity and applicability of all relevant tools.

**Results:** Of 22,460 unique citations, we identified 16 eligible studies reporting on 12 financial well-being instruments. We found evidence for sufficient structural validity for four instruments (33%), sufficient internal consistency for 11 (92%), sufficient cross-cultural validity/ measurement invariance for three (25%), sufficient reliability in one (8%), and sufficient hypothesis testing for construct validity for nine instruments (75%). Our veteran partners identified three instruments as very clear and very applicable to veterans: [1] Economic Quality of Life Measure (Econ-QOL), [2] Personal Financial Wellness Scale (PFWS), and [3] Living Standards Capabilities for Elders Scale (LSCAPE). None of the instruments were developed in a veteran sample, and only Econ-QOL was validated among veterans.

**Conclusions:** This systematic review identified 12 financial well-being instruments, among those reporting strong psychometric properties and endorsed by our veteran partners, Econ-QOL has been validated in a US veteran population. The PFWS and LSCAPE appear promising but require validation among veterans.



#### 4E01: Feasibility and Acceptability of Virtual Strategy-based Cognitive Rehabilitation for Canadian Armed Forces and RCMP Veterans: Results of the STAR-C2 Study

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**Introduction:** Cognitive rehabilitation is standard practice for both military personnel and civilians with mild traumatic brain injury (mTBI), aka concussion. Intervention for military personnel is based primarily on civilian data, as there has been only one randomized controlled trial of cognitive rehabilitation for military mTBI, the U.S. Study of Cognitive Rehabilitation Effectiveness (SCORE). SCORE resulted in statistically significant and clinically meaningful reductions in functional cognitive complaints, but effect sizes were relatively small and the 10-week, in-person, group format was impractical and there was no clinical uptake.

**Methods:** Turkstra and colleagues from the SCORE study developed a streamlined version of SCORE that retained effective ingredients from the original, was structured to maximize treatment dose over a short time period and could be delivered in person or virtually: Symptom-Targeted Rehabilitation for Concussion (STAR-C). STAR-C is a 3-week, strategy-focused, individualized intervention aimed at improving everyday cognitive function, delivered by trained speech-language pathologists or occupational therapists. In a recently completed pragmatic trial funded by the US Congressionally Directed Medical Research Program, STAR-C was rated as acceptable, appropriate, and feasible by U.S. clinicians, veterans, and active duty service members, with no differences between delivery in person vs virtually. We adapted STAR-C for the Canadian context (STAR-C2) and are conducting a pilot feasibility RCT of 60 Canadian Armed Forces and RCMP veterans. The comparison is education about concussion, which is standard care for cognitive challenges for most veterans with mTBI.

**Results:** The study is in progress and is on track to be completed in June 2024. We expect results to show that clinicians and participants rate STAR-C2 as feasible, acceptable, and appropriate for treatment of everyday cognitive challenges.

**Conclusions:** There are strategies available to help CAF and RCMP veterans increase success in their everyday cognitive tasks, and those strategies can be taught and trained virtually in individual therapy by speech-language pathologists and occupational therapists.

#### 4E02: Pharmacological Prophylaxes for Chronic Migraine: A systematic review and network meta-analysis of randomized controlled trials

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**Introduction:** Chronic migraine is a common cause of disability for which several interventions are available to prevent onset of symptoms or mitigate their severity. Understanding the comparative effectiveness of current pharmacological prophylactics is crucial for informed clinical decisions and to guide future research. We performed a network meta-analysis of randomized controlled trials to assess the comparative effectiveness of available pharmacological prophylaxis for migraines.

**Methods:** We searched MEDLINE, EMBASE, Web of Science, Scopus, PsycInfo and Cochrane CENTRAL up to October 2023 for trials that: (1) enrolled adults diagnosed with chronic migraine, and (2) randomized them to any prophylactic medication vs. another medication or placebo. We performed a random-effects frequentist network meta-analysis for all patient-important outcomes and assess certainty of evidence using GRADE approach. We developed a treatment hierarchy based on comparative benefits and harms of prophylactic interventions and the associated certainty of evidence using minimally-contextually GRADE approach.

**Results:** We included 193 randomized trials. Compared to placebo, CGRP monoclonal antibodies (mean difference [MD] -1.7, 95%CI: -1.1 to -2.2), injection of botulinum toxin (MD -1.8, 95%CI: -0.7 to -2.9), calcium channel blockers (MD -1.8, 95%CI: -0.5 to -3.0), beta-blockers (MD -1.4, 95%CI: -0.2 to -2.6), and anticonvulsants (MD -1.1, 95%CI: -0.4 to -1.8) were among the most effective treatments in reducing average number of headache days per months. Anticonvulsants (Risk Ratio [RR] 2.3, 95%CI: 1.8 to 3.0), calcium channel blockers (RR 1.8, 95%CI: 1.1 to 3.1), and tricyclic antidepressants (RR 2.3, 95%CI: 1.3 to 3.8) showed the highest risk of discontinuation due to adverse events.

**Conclusions:** Our findings suggest that CGRP inhibitors, botulinum toxin, and beta-blockers may provide the greatest benefit, and tolerability, for reducing the frequency of migraine headaches.

#### 5A02: Discriminatory Experiences among Veterans and Canadian Armed Forces Members seeking Mental Health Services

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**Introduction:** The psychological consequences of exposure to deployment-related stressors among Veterans and Canadian Armed Forces (CAF) personnel is a well-studied topic. However, less is known about other operational stress injuries (OSI) that prompt CAF members and Veterans to seek mental health services, especially for traumas and stressors involving discrimination. We sought to better understand the prevalence and typology of discriminatory events among CAF members and Veterans seeking specialized mental health services, and to compare frequencies of discriminatory events by gender and deployment status.

**Methods:** Experiences of discrimination, including acts of military sexual trauma (MST), were retrospectively analyzed from the assessment reports of 234 CAF members and Veterans who accessed mental health services from a specialized outpatient mental health clinic between April 1, 2017 and March 31, 2020. Variables of interest included absence or presence of a discriminatory event (coded as non-sexual bullying/harassment, non-sexual assault, MST, or other), gender, deployment, and self-perceived reason for discrimination.

**Results:** Most participants were Veterans (89%), male (84%), and had been deployed at least once. Overall, 35% of the sample had at least one act of discrimination documented in their mental health assessment report. Discrimination was more prevalent among women (76%) than men (28%) ( $\chi^2(1,1) = 31.04, p < .0001$ ); and among those who had not been deployed (60%) versus those who had (20%) ( $\chi^2(1,1) = 37.07, p < .0001$ ). Of note, nearly half of women (49%) had experienced MST.

**Conclusions:** Discrimination was frequently reported among participants, particularly women and those who had never been deployed. Service-related traumas for which Veterans and military personnel seek treatment extend beyond those incurred during deployment. Demonstrating the need to expand our clinical understanding of contextual experiences and their various sequelae (such as moral injury) to include Veterans and service members who have experienced interpersonal stressors and other traumatic events not related to deployment. A more fulsome understanding of occupational stressors continues to be warranted in order to improve the psychological health of Veterans and service members.

### **5D01: Prognostic Factors in Major Depressive Disorder: Comparing responders and non-responders to Repetitive Transcranial Magnetic Stimulation, a Naturalistic Retrospective Chart Review**

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**Introduction:** Repetitive transcranial magnetic stimulation (rTMS) as a non-invasive method of brain stimulation has been widely utilized as an effective and approved treatment for major depressive disorder (MDD) response rates varying between 30 and 64%. Information to determine which factors are associated with better treatment outcome still remains scarce. This naturalistic retrospective chart review was performed in an attempt to shed light on easily obtainable and measurable positive predictive factors for patients referred to rTMS.

**Methods:** Protocol parameters, concurrent medication, patient- and clinician-rated scales, different rTMS protocols and treatment outcomes were reviewed for 196 patients with MDD who received rTMS through the Neuromodulation and Neuropsychiatry Unit at Saint Boniface Hospital between 2013 and 2019. Logistic regression was used in addition to marginal effects to assess the different predictor variables, with success being defined as a 50% reduction or more on the Hamilton Depression Rating Scale (Ham-D) for response, and a Ham-D of  $\leq 7$  by the last session for remission.

**Results:** Hamilton Depression Scale at 10 sessions was predictive of remission, and Sheehan Disability Scale (SDS) at 10 sessions was predictive of response to rTMS. Ham-D, SDS, and Beck Anxiety Index were all predictive of remission and response by 20 sessions and Sheehan Disability Scale at 10 sessions were predictive of treatment outcome. High frequency rTMS was found to have a similar response and remission rate to low frequency protocol, but and higher response rate to intermittent Theta Burst Stimulation (iTBS) with, but there was no difference in remission rates. For response, Positive Predictive factors of response were lower age, higher resting motor threshold and being on Bupropion, and negative predictive factors were antipsychotics, anticonvulsants, and benzodiazepine usage. For remission, antipsychotics, anticonvulsants, and anticonvulsant use were negative predictive factors, while bupropion use and higher resting motor threshold were positive predictors. Motor threshold and the severity of depression as measured by baseline Ham-D were not associated with different probabilities of treatment success.

**Conclusions:** The results of this study can provide further understanding of potential factors affecting treatment outcome which can be helpful at providing clinicians with easily applicable tools to determine best candidates for rTMS therapy.

### **6A02: Cannabis Use and Canadian Veterans: Chronic Pain, Mental Health, and Help-Seeking**

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Natalie, PhD<sup>1</sup>; Bolton, Shay-Lee, PhD<sup>1</sup>; Carleton, R. Nicholas, PhD<sup>2</sup>; Stein, Murray, MD<sup>3</sup>; Affi, Tracie, PhD<sup>1</sup>

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**Introduction:** A substantial proportion of Veterans experience mental and physical health difficulties, including posttraumatic stress disorder and chronic pain, for which cannabis is sometimes medically authorized. However, much of the research on cannabis use among Veterans is from the United States, and less is known about cannabis use specific to the Canadian context. Information on the prevalence of cannabis use, as well as the mental health profiles and help-seeking behaviours of Canadian Veterans who use cannabis, is important for developing more targeted prevention and intervention services and supports.

**Methods:** The current study used data from the 2018 Canadian Armed Forces Members and Veterans Mental Health Follow-up Survey. Data from Veterans ( $n=1992$ ) were used to examine associations between past 12-month cannabis use and concurrent mental disorders, chronic pain conditions, use of other substances, suicide behaviours, perceived need for care, and help-seeking behaviours among Canadian Veterans. Descriptive statistics and logistic regression were used to examine these associations.

**Results:** In the sample, several participating Veterans (16.7%) reported using cannabis in the past 12-months. Among Veterans reporting past 12-month cannabis use, many reported using cannabis less than once a month (31.5%), once a week or more (25.0%), or every day (43.6%). Past 12-month cannabis use was associated with statistically significantly higher odds of current cigarette smoking (Adjusted odds ratio [AOR]=1.84, 95% Confidence interval [CI]=1.24, 2.73), binge drinking (AOR=1.64, 95% CI=1.18, 2.28), any chronic pain condition (AOR=1.39, 95% CI=1.03, 1.90), mental health disorders (AORs ranged from 1.75 to 3.13), and suicide ideation (AOR=2.37, 95% CI=1.46, 3.86) in fully adjusted models. Veterans who used cannabis were also statistically significantly more likely to perceive a need for care (AOR=3.22, 95% CI=2.30, 4.49) and report professional help-seeking (AORs ranged from 1.83 to 3.71) in the past 12-months than Veterans who did not use cannabis.

**Conclusions:** The strong association of past 12-month cannabis use with indicators associated with more compromised mental (i.e., problematic alcohol use, mental disorders, suicide ideation) and physical (i.e., chronic pain) health suggests that Canadian Veterans who use cannabis may represent a population with complex need that would likely benefit from additional services and supports. Cannabis using Veterans were also more likely to perceive a need for care and to seek professional help, which provides several opportunities for more timely identification and intervention.

## 6C04: Nonmedical Prescription Drug use among Canadian Armed Forces Veterans: Data from the Canadian Armed Forces Members and Veterans Mental Health Follow-up Survey

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**Introduction:** Nonmedical prescription drug use (NMPDU) is a public health concern that can cause degradation of physical and mental wellbeing. Research to examine prevalence and correlates of NMPDU in Canadian Armed Forces (CAF) Veterans is required to better understand the impact of NMPDU in this group and to identify those most at-risk. The purpose of this study was to assess correlates of NMPDU among CAF Veterans, including sociodemographics and physical and mental disorders.

**Methods:** Data were drawn from the 2018 CAF Members and Veterans Mental Health Follow-up Survey (CAFVMHS). Two-thirds of the sample ( $n=1,922$ ) were comprised of service members who transitioned from active duty to Veteran status in follow-up. NMPDU included three categories of substances: sedatives/tranquilizers, stimulants, and analgesics.

**Results:** Nine percent of Veterans indicated having NMPDU in the past year, while 16.8% had NMPDU in their lifetime. Being unpartnered increased the odds of past-year NMPDU, while older age, air environment, and officer rank were associated with lower odds of NMPDU. Past-year presence of a mental disorder, alcohol use disorder, suicidal behaviour, chronic pain conditions, cannabis use, and greater number of physical health conditions demonstrated strong positive associations with NMPDU (ORs ranging from 1.36 to 5.31). Increasing number of traumatic exposures and increasing number of deployment-related traumatic experiences led to greater likelihood of NMPDU (ORs of 1.15 and 1.19, respectively).

**Conclusions:** Results highlight the vulnerability of the CAF Veteran population to NMPDU. Correlates noted suggest potential intervention points where supports could be beneficial during service and while transitioning to Veteran status.

## 7A02: Healing the Brain in the Aftermath of Trauma: Integrating fMRI and EEG Neurofeedback Research for the Treatment of Posttraumatic Stress Disorder

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<sup>1</sup>University of Ottawa; <sup>2</sup>Atlas Institute for Veterans and Families; <sup>3</sup>McMaster University; <sup>4</sup>Western University; <sup>5</sup>University of Geneva

**Introduction:** Despite the high prevalence rate of post-traumatic stress disorder (PTSD) worldwide, up to 40% of patients with PTSD can fail to respond to frontline treatments. Using neurofeedback, we can directly target dysregulated neural circuits with the goal of recalibrating brain activity. This method is non-invasive and helps patients to directly modify neural activity associated with their symptoms. Previous research has established a strong link between PTSD symptoms and hyperactivity within both the amygdala and posterior cingulate cortex (PCC) during trauma-related processing. As such, previous neurofeedback studies in PTSD have focused on these two target regions. Critically, however, the differential effects of neurofeedback target selection on PTSD-related neural activity and clinical outcomes have not fully been elucidated. Here, we compared the effectiveness of regulating both the amygdala and PCC using neurofeedback. Building on these promising results, we then present findings from a multi-session, randomized controlled trial (RCT) of EEG neurofeedback in PTSD.

**Methods:** In a single session real-time fMRI neurofeedback mechanistic study, we compared whole-brain activation and changes in symptoms among  $n=28$  participants with PTSD who either trained to downregulate activity within the amygdala or the PCC while viewing personalized trauma words. Extending this work, we then conducted a 20-session, double-blind, RCT of alpha desynchronizing EEG neurofeedback, whereby participants with PTSD ( $n=38$ ) were randomly assigned to either the experimental or sham-control neurofeedback group. Whole-scalp resting-state EEG recordings were collected pre- and post-treatment. We additionally examined brain waves at baseline among PTSD and age/sex-matched healthy controls ( $n=32$ ).

**Results:** Our fMRI neurofeedback results revealed that the PCC group demonstrated significant downregulation within several brain regions implicated in PTSD. Importantly, only PCC downregulation was associated with reduced symptoms. In our EEG neurofeedback RCT, we observed significantly decreased PTSD severity scores in the experimental group only, when comparing post-neurofeedback and 3-month follow-up scores to baseline, with a remission rate of 60%. Further, we found that only PTSD patients in the experimental group demonstrated restored alpha waves within areas that displayed reductions at baseline as compared to healthy controls.

**Conclusions:** Our results suggest that neurofeedback has the capacity to restore dysregulated brain activity that has repeatedly been linked to PTSD symptoms. This collection of research may help to inform neurofeedback brain targets for the treatment of PTSD. Future clinical trials investigating the use of neurofeedback as a neuroscientifically-guided adjunct intervention for PTSD are urgently needed to reduce illness-burden.

### 7A03: An “Unsticking Therapy” for Post-traumatic Stress Disorder: Multi-modal Motion-assisted Memory Desensitization and Reconsolidation Therapy (3MDR) for Military Members, Veterans and Public Safety Personnel

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**Introduction:** Military Members, Veterans and Public Safety Personnel (MVP) are at elevated risk of treatment-resistant post-traumatic stress disorder (TR-PTSD) and other trauma-related conditions. Those struggling with TR-PTSD suffer from chronic and debilitating symptoms despite receiving first line therapies, demonstrating the need for treatment innovation. Multi-modal Motion-assisted Memory Desensitization and Reconsolidation (3MDR) therapy is a novel, nonpharmacological, brief, virtual reality assisted therapy, which targets factors linked to treatment failure. 3MDR components of treadmill walking alongside the therapist, a personalized multi-modal immersive environment, dual attention task, and post-platform discussion aims to increase engagement in therapy, reduce avoidance and dissociation, and increase a sense of self-efficacy needed for effective PTSD treatment.

**Methods:** This mixed-methods clinical trial studied the effectiveness of 3MDR for Veterans and public safety personnel with PTSD and other trauma-related mental health concerns. Participants received 6 to 10 sessions of 3MDR therapy, in addition to 2 preparatory sessions and 2 follow-up reconsolidation sessions. Quantitative and qualitative data were collected pre/post-treatment and at 3, 6, and 12 months follow-up. Self-report questionnaire data was collected before the start of 3MDR therapy and at the first reconsolidation session. The questionnaire battery included various instruments to assess mental health symptoms and participant outcomes. We used permutation testing to compare questionnaire scores pre/post-3MDR, with false discovery rate (FDR) correction to control for multiple comparisons. Qualitative data collected throughout the intervention and upon follow-up interviews was transcribed and thematically-analyzed.

**Results:** 3MDR participants ( $n=46$ ) demonstrated statistically significant improvements ( $p<0.05$ ) on self-reported measures including the PCL-5 (PTSD symptoms), PHQ-9 (depression), GAD-7 (anxiety), OQ-45 (general functioning), MIOS (moral injury), AAQ-II (psychological flexibility), CD RISC-25 (resilience), and DERS-18 (emotional regulation) following receipt of this non-pharmacological trauma-therapy. We did not see significant differences in two measures, the BIPF (psychosocial functioning) and PABQ (post-traumatic avoidance). Qualitatively, participants reported a renewed sense of hope, and significant changes in self-efficacy, functioning, emotional regulation, and interpersonal relationships. Symptom reduction has been



reported up to 1 year post-intervention. 3MDR study dropout rates (6%) contrast with traditional trauma-focused therapies (25-48%). Return on investment (ROI) based on treatment outcomes, client discharges, and service utilization was also noteworthy.

**Conclusions:** Preliminary results indicate statistically significant improvements in mental health measures, self-efficacy, interpersonal dynamics and functioning associated with 3MDR therapy. Given the difficulty of treating TR-PTSD and other trauma-related mental health concerns in many patients, 3MDR could provide a valuable, brief, nonpharmacological treatment for Veterans and public safety personnel with such concerns and notable ROI.

#### 7A04: Key Mechanisms in MDMA-AT for PTSD

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<sup>1</sup>Leiden University Medical Center

**Introduction:** Post-traumatic stress disorder (PTSD) is a prevalent psychiatric condition that significantly impacts daily functioning in patients but lacks adequate treatment options. 3,4-methylenedioxymethamphetamine (MDMA) as an adjunct to psychotherapy for the treatment of PTSD has been studied increasingly for the last two decades and has shown promising results through quantitative data. However, few qualitative studies have been conducted to investigate patients' experiences who participate in these trials.

**Methods:** This study intends to complement and clarify the quantitative findings resulting from a Phase-II clinical trial for assessing the safety and efficacy of MDMA-assisted psychotherapy for PTSD by using a qualitative approach based on available material of 4 recorded and transcribed integrative sessions per participant. An Interpretative Phenomenological Analysis (IPA) was conducted for 7 participants who met criteria for severe PTSD to develop a deeper understanding of the treatment and its efficacy.

**Results:** Results include statements of how patients perceive, experience, explore and process challenging emotions previously avoided or blocked. It explored how individuals with severe PTSD experience change and relief of symptoms after undergoing MDMA-AP and how the underlying therapeutic elements were integrated into their daily lives. We attempted to portray the participants' integration experience through the lens of psychological growth and therapeutic action and capture which mechanisms of action might have played a role. Analysis results provided real-life statements from participants that reflect perceived mechanisms of change and showed to what extent their proposed working mechanisms integrate into daily life.

**Conclusions:** The findings of this study emphasize the importance of qualitative research in studying MDMA-AP by comple-

menting and clarifying its quantitative outcomes. The themes reflected by participants aid in a better understanding of the known theoretical frameworks that sought to explain this therapy's working mechanism. Future research could use this study's findings in designing better fitting protocols in order to expand psychological mechanisms of action and maximize therapeutic benefit.

#### 7B05: A Pilot Study of the Feasibility and Acceptability of using Virtual Reality for Anxiety and Stress Management with Inpatient Former Serving Australian Defence Force members in a Mental Health Hospital

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<sup>1</sup>Military and Emergency Services Health Australia (MESH);

<sup>2</sup>Flinders University (Australia)

**Introduction:** The COVID-19 pandemic has strained health-care systems especially in inpatient settings, where in cases individuals may resist therapeutic intervention. Virtual Reality (VR) therapy is increasingly recognized as effective, particularly in addressing issues in inpatient settings like anxiety and stress. Combining traditional psychological approaches with digital technology has shown promise, with VR users reporting greater therapy engagement, positive experiences, and improved outcomes. VR serves as a non-pharmacological complement to usual care. Some studies indicate that VR-guided meditation can reduce anxiety in veterans, highlighting its potential usefulness in this population. However, there's a significant gap in evidence concerning VR's efficacy for veteran populations, especially in inpatient settings. As such, this study sought to evaluate the feasibility, acceptability, and impact of a virtual reality meditation program among inpatients at a veteran mental health hospital.

**Methods:** This mixed-methods pilot investigation utilizes self-report measures and qualitative interviews of inpatient former serving Australian Defence Force personnel at a veteran mental health hospital in Adelaide, South Australia. Participants were invited to complete six, 15-minute sessions of the VR program TRIPP over a two-week period. TRIPP offers immersive, meditative experiences aimed at inducing calmness. It generates visually dynamic environments for guided meditation, incorporating interactive breathing exercises with breath visualization, procedurally generated music, and guided reflections. Measures of anxiety, stress, depression, anger, technology use, perceived program effectiveness were collected before and after the two-week period. Additionally, semi-structured interviews examining perceptions, experiences, perceived impact of the program were conducted. Emphasizing triangulation, changes in self-report scores supported the qualitative findings assessing acceptability, feasibility, and impact of a VR meditation program in a veteran mental health hospital.

**Results:** Preliminary results of this pilot study highlight issues in feasibility, such as hospital admission/discharge time-frames, hospital staff capacity requirements, and the number of sessions required. However, qualitative data around the experiences of veterans accessing the VR indicate that despite limitations, they found the program to be valuable. Additional constructive and insightful considerations for future studies will be discussed.

**Conclusions:** This study informs the feasibility of VR supporting wellbeing for inpatient veterans, offering insights about the ongoing, safe, and therapeutic implementation of both VR specifically for veteran and mental health inpatient participants. Given that hospitalization is a stressful and anxiety-provoking situation for any individual, the information sharing from this study may be transferrable to use of VR relaxation technology in other inpatient settings.

### 7C02: Age, not Veteran Status, moderates the Associations between Social Support and Mental Health Outcomes in Aging Canadians

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**Introduction:** Social support is a well-known protective factor on health outcomes in Veterans (Wang et al., 2021). Still, studies suggest that Veterans have lower levels of social support compared to non-Veterans (Campbell et al., 2021) and female Veterans have lower levels of social support compared to male Veterans (Driscoll et al., 2015). Furthermore, some evidence suggest that age may also moderate the effect of social support on mental health outcomes (Kafetsios & Sideridis, 2006). Aging Veterans experience challenges similar to those of non-Veterans (O'Malley et al., 2020), as well as unique challenges and resiliencies (Wilmoth & London, 2011) which may impact how protective factors (such as social support) may correlate to their mental health distinctively. Although some evidence suggest that social support may influence health outcomes differently for Veterans and non-Veterans, there remains a dearth of research looking at these relationships (Hoffmire et al., 2024), particularly among aging populations. This study sought to examine the influence of age, gender and Veteran status on social support and depression.

**Methods:** The sample consisted of 48663 aging Canadians who participated in the Canadian Longitudinal Study on Aging (CLSA). A three-way ANOVA was conducted to determine the effects of Veteran Status, Age and Gender on Social Support. Moderated multiple regression analyses were run to examine

the moderation effects of Veteran status and age on the relationship between social support and depression.

**Results:** There was a significant main effect of Veteran status, age, and gender on social support. There was a significant interaction between age and gender as well as gender and Veteran status, such that older females and female Veterans had less social support than older males and male Veterans. Veteran status was found to be a significant partial moderator of the relationship between social support and depression. The negative relationship between depression and social support is stronger in the non-Veterans subgroup compared to the Veterans subgroup. Age was also found to be a significant partial moderator of the relationship between social support and depression in Veterans. The negative relationship between depression and social support is stronger in the younger Veterans subgroup at lower levels of social support.

**Conclusions:** Our findings replicate results from previous studies regarding Veterans' levels of social support compared to non-Veterans. Our findings also suggest that social support impacts depressive symptoms differently in Veterans compared to non-Veterans, and in younger Veterans compared to older Veterans. Further implications will be discussed.

### 7C04: A Pilot Study to Develop a Preliminary Cultural Competency Framework for Healthcare Providers Caring for Veterans with Concurrent Post-traumatic Stress Disorder and Dementia in Long-term Care Settings

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**Introduction:** Symptoms of posttraumatic stress disorder (PTSD) in Veterans with dementia can be difficult to identify; therefore, healthcare providers (HCPs) often misattribute symptoms to other conditions. These symptoms can also be difficult for HCPs to manage and can lead to burnout and frustration. Furthermore, the average age of Canadian Armed Forces Veterans is 61 years old and many are expected to enter older adulthood within the next decade. Changes to legislation are leading to the dissolution of Veterans long-term care (LTC) facilities, meaning these aging Veterans will live in community LTC homes that may not have the expertise to care for this population. Many HCPs are not aware of the important military culture considerations and health needs of Veterans, including those with concurrent PTSD and dementia. There is a lack of research on this topic despite the increasing need for cultural competencies to inform care practices of providers working with this population. As such, this pilot project aims to develop a preliminary framework for HCPs in LTC working with Veterans with concurrent PTSD and dementia.

**Methods:** Marelli et al.'s (2005) competency modelling approach will be used to develop a preliminary cultural competency framework outlining critical information about the health needs and military culture considerations that HCPs working with Veterans with dementia and PTSD should be aware of. Qualitative data will be collected through semi-structured interviews at Sunnybrook Veterans Centre in Ontario with 10 Veterans aged 60+ living in a Veterans LTC facility with PTSD and dementia, 10 family members or caregivers of a Veteran with PTSD and dementia, and 10 HCPs with experience caring for this population. Qualitative data will be analyzed in accordance with Ritchie & Spencer's (1994) Framework Analysis to identify key themes, and these themes will be used to create the final framework which will include behavioural examples of how to apply the competencies in practice.

**Results:** Data collection is on-going but will be completed and analyzed in time for dissemination at the conference.

**Conclusions:** This framework is the first of its kind and can help inform training programs for HCPs working with older Veterans living in LTC with PTSD and dementia. Additionally, these findings will support the feasibility of using this methodology in future research and inform research priorities in this area. Overall, once the framework is developed it can be adapted to the care of other vulnerable populations.

#### **7D04: Developing and Testing Training for Cultural Competency for Civilians Working with Military Populations in Australia**

**Bowen, Henry, PhD<sup>1</sup>**

<sup>1</sup>Military and Emergency Services Health Australia (MESHA)

**Program/Intervention Description:** Demonstrating adequate cultural competency when working with a specific cultural group is core to improving patient engagement in care and their health outcomes, which may impact whether an individual requires additional care in the future. Current and former serving military personnel and their families are a unique cultural group who face a range of health and lifestyle concerns and can struggle to access services and support that is appropriate to their needs. There is a recognised need among civilian service providers, employers, and government staff to access education to address the overall lack cultural competency in understanding and responding to the needs of this specific population in Australia. However, there is a lack of available provision of this training. As such, this presentation will discuss the development and piloting of an evidence-based, lived-experience-led veteran cultural competency training program that is targeted toward improving practical competence among civilians servicing this population in Australia.

**Evaluation Methods:** This study had three phases. Phase one represented a development phase, where an existing cul-

tural awareness training program developed by Military and Emergency Service Health Australia (MESHA) for students was adapted for use in clinical and government settings. MESHA's lived experience facilitator model and workshop development specialist skillset were utilized during this phase. Once the program had been developed, phase two was conducted to pilot of the training, assessing acceptability and feasibility of delivery. Feedback about the training modules was obtained, which was used to revise the program prior to phase three. In phase three, a full-scale program evaluation was conducted to determine whether the training improved cultural competence for working with current and former military. Participants' cultural competence was evaluated before and after they completed the training, alongside their perceptions and learnings from the training delivery.

**Results:** The expected results of this study will detail the accessibility, feasibility, and impact of this training program for civilians who work with military populations across Australia. It will also provide a snapshot of the practical requirements and outcomes of an evidence-based, lived-experience led cross-cultural awareness workshop that can be delivered to civilians, and offer a discussion around how this training could be culturally contextualised for international audiences.

**Conclusions:** There is an increasing need to support military populations in culturally competent ways which are sustainable, transparent, and scalable. This training offers an opportunity to improve access, outcomes, and experiences for military personnel and their families who require support.

#### **Poster Presentations**

##### **P147: High on 3MDR: The Impact of Cannabis use on the Effectiveness of Multi-Modal Motion-Assisted Memory Desensitization and Reconsolidation (3MDR) among Veterans with PTSD**

**Bright, Katherine, PhD<sup>1,2,3,4</sup>; Beck, Amy, PhD<sup>1,4</sup>; Brown, Matt, PhD<sup>1</sup>; Sevigny, Phillip, PhD<sup>1</sup>; Bremault-Phillips, Suzette, PhD<sup>1</sup>**

<sup>1</sup>University of Alberta; <sup>2</sup>Mount Royal University; <sup>3</sup>University of Calgary; <sup>4</sup>Thompson Rivers University

**Introduction:** Since the enactment of the Cannabis Act, the authorization of cannabis for medical purposes among Canadian Veterans has surged, from 10,466 users in 2018-2019 to 21,108 in 2022-2023. Projections for 2023-2024 suggest a continued rise in use and associated costs, with reimbursements by Veterans Affairs Canada to eligible Veterans being \$8.50/gram for up to three grams/day. There is growing concern that the government's substantial expenditure on reimbursements lacks a thorough understanding of potential implications of cannabis use. More specifically, questions have arisen around the impact of cannabis use on both wellbeing and treatment outcomes of Veterans seeking mental health from government-funded healthcare providers and clinics for treatment-re-

sistant posttraumatic stress disorder (TR-PTSD) and related conditions. Despite the well-established risk of TR-PTSD and moral injury (MI) among military personnel and Veterans, the impact of cannabis on therapies for TR-PTSD and MI remains poorly understood.

**Methods:** This study analyzed data from a mixed-method waitlist control trial investigating the efficacy of 3MDR in military members and veterans. Qualitative data from recorded interviews with PTSD-affected Veterans (n=5) who reported cannabis use during 3MDR therapy were examined, alongside quantitative data from 3MDR participants (n=15) indicating cannabis use within the past 12 months.

**Results:** Qualitative findings revealed that participants often used cannabis the night before their 3MDR sessions, reporting enhanced engagement and favorable outcomes such as improved coping with triggers and cognitive shifts. Some participants experienced a reduction in cannabis use over the course of 3MDR therapy, with two individuals ceasing use entirely. Quantitatively, most participants used cannabis before or after, but not during, 3MDR sessions. Significant improvements in depression, anxiety, trauma-related symptoms, and quality of life were observed post-3MDR among 13 of the 15 participants. However, due to the study's small sample size, however, these findings warrant cautious interpretation.

**Conclusions:** Military members and Veterans face significant risks of TR-PTSD, with worse outcomes compared to civilians. This mixed-methods study underscores the importance of personalized care and evidence-based approaches when considering cannabis as a treatment option for Veterans. It emphasizes the need for structured education and awareness programs to enable informed decision-making and promote safe and responsible cannabis use within this population. Moving forward, a Veteran-centric approach is advocated, involving all stakeholders in the development of knowledge translation materials and policies to maximize benefits and minimize potential harms associated with cannabis use among Veterans.

### **P150: Exploring Neurophysiological Measures of Cognition in Canadian Armed Forces Members, Veterans and First Responders**

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**Introduction:** Canadian Armed Forces (CAF) members, veterans and first responders are exposed to a unique collection of stressors that can impact cognition and mental health. The current work is focused on an objective brain vital signs framework - extracted from portable electroencephalography (EEG) - to monitor cognition and mental health. Brain vital sign monitoring has been increasingly used in clinical evaluation of concussion and traumatic brain injury research and has expanded to post-traumatic stress disorder. The objective of these common projects is to better understand neurophysiological impacts on cognition and mental health.

**Methods:** Legion Veterans Village (LVV) is involved in three on-going studies: an observational study collecting brain vital signs of first responders during ongoing clinical care; an observational study measuring brain vital signs throughout a specialized treatment program for veterans with brain fog; and a randomized, double-blind, placebo-controlled crossover study exploring MindGain, a nootropic supplement designed to mitigate stress response, enhance focus and cognitive performance (Health Canada approved). Mental health questionnaires, sleep quality, and cognitive assessments are being collected alongside brain vital signs to characterize intervention related improvements.

**Results:** Data collection is ongoing in all three studies with expected final results by October 2024. The presentation will provide updates including available results and future directions. In the first MITACS-funded study, based on previous brain vital signs research showing sleep directly effects cognition, it is expected that mental health care will improve sleep and therefore cognition for first responders. Similarly, LVV has received significant Veterans Affairs Canada funding for a clinical study on brain fog interventions for veterans, currently in the start-up phase. Finally, CAF members are participating in a randomized, double-blind, placebo-controlled crossover study exploring the impact of MindGain. Interim analyses have demonstrated a positive response in terms of reduced hyper attention and increased cognitive processing, as measured by brain vital signs.

**Conclusions:** Ongoing real-world studies are investigating intervention effects in CAF members, veterans and first responders on cognition and mental health. The combined results of these studies will utilize objective and sensitive neurophysiological measures of different treatment interventions for the stressors and concomitant brain health impacts in military and first responders.

### **P156: Identifying Barriers and Facilitators to Mental Health Care Access for Veterans And their Families: Results from a rapid review**



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<sup>1</sup>MacDonald Franklin Operational Stress Injury Research Centre; <sup>2</sup>Western University

**Introduction:** Transitioning to civilian life after military service can be challenging for Veterans and their Families. Accessible mental health services are crucial during this period to provide support. We conducted a rapid literature to examine the barriers and facilitators to accessing mental health care for Veterans and their Families during the post-service transition period. These barriers and facilitators were mapped onto socioecological domains encompassing structural, practical, social, and individual aspects.

**Methods:** This review utilized Cochrane's guidelines as a methodological framework (Higgins, 2022), and followed the Preferred Reporting Items for Systematic Review and Meta-Analysis - Rapid Review (PRISMA-RR) guidelines for standards of reporting findings (Stevens et al., 2018).

**Results:** This review included 60 documents. Among these documents, 23 barriers and 14 facilitators were identified across structural, practical, social, and individual domains. Issues navigating the mental health care system was identified as the main barrier among Veterans and Families. Unsurprisingly, those who received support navigating the system identified this as a significant facilitator. This research mostly focused on Veterans, highlighting the need for more research focusing on Veteran Families.

**Conclusions:** Overall findings yielded suggest that access to mental health services for Veterans and their Families may not be solved by addressing one type of barrier alone. Our results underscore the complexity of considerations for Veterans and their Families accessing mental health services. Addressing these challenges may require a multifaceted approach. Coordinated efforts to address structural, practical, social, and individual obstacles are essential for improving access to mental health services and, subsequently, improving mental health outcomes for Veterans and their Families.

### **P160: Exploring New Directions in Mental Health Research at Veterans Affairs Canada**

**Houle, Stephanie, PhD<sup>1,2</sup>**; Jones, Andrea, PhD<sup>1</sup>; Jakobsen, Whitney<sup>3</sup>; Hall, Amy, PhD<sup>1</sup>

<sup>1</sup>Veterans Affairs Canada; <sup>2</sup>Lawson Health Research Institute; <sup>3</sup>Statistics Canada

**Brief Description:** The growing number of Veterans experiencing mental health conditions highlights the need for research to inform evidence-based programs and policies designed to support the mental wellbeing of Veterans and their families. In early 2023, the Veterans Affairs Canada (VAC)'s Research Directorate initiated development of a Mental

Health Research Plan with the objectives of: 1) identifying and elaborating key areas of research opportunity in the field of mental health; 2) encouraging community uptake of research on Veteran mental health; and 3) highlighting opportunities to leverage experience, knowledge and data through partnerships with researchers and stakeholders.

The development of the Mental Health Research Plan consisted of three main activities: literature review, consultation with stakeholders, and identification of existing survey data sources relevant to military and Veteran mental health. Information was gathered regarding stakeholders' current and future priorities, ongoing and planned lines of effort, and perspectives relevant to Veteran mental health. Once primary themes and learning objectives were identified, further consultation with internal stakeholders and research partners was sought to identify and refine the lines of inquiry for each theme. Project proposals were then developed, with priority placed on leveraging currently available data sources and existing partnerships.

**Patient Population:** Veterans and Veteran families. Overlapping interests and implications for actively serving CAF members.

**Results:** The Mental Health Research Plan consists of 6 project proposals and 2 planned requests for proposals covering the following themes: 1) *Veterans' substance use and misuse*; 2) *Optimizing Veterans' access and utilization of VAC services*; 3) *Positive mental health*; 4) *Emerging and alternative approaches to care*; 5) *Mental and physical health comorbidities*; 6) *Veteran families' mental wellbeing*. In addition to the specific research proposals within each theme, the Mental Health Research Plan provides information on 25 existing Canadian survey data sources with the capacity to address questions relevant to military and Veteran mental health.

**Conclusions:** The Mental Health Research Plan represents the Research Directorate's current efforts specific to mental health research, with the aim of producing research intended to support evidence-based recommendations for policies and programs at VAC. Recommended research directions for each of the key areas of research will be presented and discussed, and a brief overview of existing data sources will be provided. Considerations regarding how each proposed research area addresses the principles of key frameworks, including sex and gender-based plus analysis, the VAC wellbeing framework, and key ministerial commitments (e.g., suicide prevention, increasing access to care), will also be addressed.

### **P162: Gambling Harm amongst United Kingdom Veterans and its Influence on Family Life - The HABIT study**

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<sup>1</sup>Anglia Ruskin University; <sup>2</sup>Swansea University

**Introduction:** Veterans are a population vulnerable to problem gambling and rates are higher in UK Veterans compared to civilians. Numerous factors are predictors of problem gambling including one's motivations to gamble, sociodemographics, gender and experience of trauma. The impact of gambling behaviours is not limited to the individual, their families may be adversely affected. This study aims to develop a greater understanding of the interplay between aspects of military service, magnitude of gambling harm, and social circumstances and behaviours. This understanding will shape our ability to then study the impact that problem gambling has on families and the role they and the military have on gambling initiation, maintenance, and help-seeking.

**Methods:** This will be achieved through collecting both quantitative and qualitative data. The study's digital survey allows for numerical assessment of a variety of measures including gambling activity, severity, employment and benefits, financial debt, coping mechanisms, aspects of mental health, alcohol use and use of healthcare services. An explanatory sequential approach will allow the findings from this initial portion of the study to inform more detailed in-person semi-structured interview to capture individuals' lived-experiences.

**Results:** The quantified data details the etiological risk-factors that predict problem gambling in a sample of the UK veteran community. Cross-sectional analysis sheds light how these factors correlate with each other and influence the likelihood of problem gambling and its severity. The qualitative data, gathered from both veterans and family members, builds rich details into the family experience. It will evidence commonalities in how veterans' gambling behaviour has influenced their families, the main challenges they faced, the stigma surrounding gambling problems in the military, and the themes that describe their journeys, learning from those with current experience of gambling within the last 12 months.

**Conclusions:** This level of understanding of the predictors, the wider impact and health correlations to problem gambling in UK veterans will provide evidence that can support service planning in both the Ministry of Defence and community health care. For the former, this will allow for better identification, at an early stage, of those vulnerable to gambling harm while in-service. For the latter, it will provide evidence of the core mechanisms identified by veterans that successful treatment services must prioritise that acknowledge the involvement and importance of affected family members, as well as the veterans.

## **P165: Measuring Life Skills Among Veterans: A systematic review of published instruments**

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<sup>1</sup>McMaster University; <sup>3</sup>Dalhousie University

**Introduction:** Veterans experience challenges that affect their well-being when transitioning from military to civilian life. Some of these challenges may arise due to issues related to life skills and preparedness—defined as the knowledge, skills and insights needed to navigate living as a civilian, self-care skills, and skills needed to maintain independence.

The ability to reliably measure life skills and preparedness is essential to assess veterans' needs and the effects of interventions directed at improving veterans' wellbeing when transitioning from military to civilian life. We performed a systematic review to identify instruments that measure life skills and preparedness as part of an initiative by Veterans Affairs Canada (VAC) to advance the measurement of constructs of wellbeing for veterans.

**Methods:** We searched MEDLINE, EMBASE, PsycInfo, CINAHL, and other relevant databases, from inception to February 2022, for articles describing the development and validation of instruments that measure life skills and preparedness in veterans or the general population.

Reviewers, working independently and in duplicate, applied the COSMIN checklist and critical appraisal tool to assess the methodological quality of studies that investigated the measurement properties of instruments and to classify instruments as sufficiently valid and reliable. We subsequently engaged three veteran partners to assess the clarity and applicability of identified instruments.

**Results:** Our search yielded 1,329 unique records, of which 13 publications describing nine instruments were eligible for review. Of these instruments, five measured life skills and preparedness among veterans and four among the general community. None of the instruments reported on all COSMIN measurement properties and risk of bias was overall high.

Structural validity was assessed for 7 instruments (2 of which were rated as very good), internal consistency in 9 (9 of which were rated as very good), construct validity in 8 (5 of which were rated as very good), content in 3 (none of which were rated as very good), and development in 3 (none of which were rated as very good). Our veteran partners could not achieve consensus on which instruments were the most applicable or clear.

**Conclusions:** Our review identified nine instruments that measure life skills and preparedness, but the measurement properties of these instruments have not been comprehensively investigated and studies reporting on their measurement properties were often rated at high risk of bias. The lack

of quality evidence prevents recommendation of one instrument to measure life skills in veteran populations.

### **P166: Measuring Employment and Meaningful Activities Among Veterans: A systematic review of published instruments**

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<sup>1</sup>McMaster University

**Introduction:** The transition from military service to civilian life presents many challenges, both for service members and their families, and can have a significant impact on the well-being of veterans. Some of these challenges may arise due to difficulties finding optimal employment and engaging in meaningful activities.

The ability to reliably measure employment and meaningful activities is essential to assess veterans' needs and the effects of interventions directed at improving veterans' wellbeing when transitioning from military to civilian life. We performed a systematic review to identify instruments that measure employment and wellbeing as part of an initiative by Veterans Affairs Canada (VAC) to advance the measurement of constructs of wellbeing for veterans.

**Methods:** We searched MEDLINE, EMBASE, PsycInfo, CINAHL, and other relevant databases, from inception to January 2022, for articles describing the development and validation of instruments that measure employment and engaging in meaningful activities in veterans or the general population.

Reviewers, working independently and in duplicate, applied the COSMIN checklist and critical appraisal tool to assess the methodological quality of studies that investigated the measurement properties of instruments and to classify instruments as sufficiently valid and reliable.

**Results:** Our search yielded 13,541 search records, of which 23 publications describing 20 unique instruments were eligible. Twenty-two of the included studies involved civilian populations, and one study included active-duty US naval personnel. Sixteen instruments addressed employment, three studies addressed employment-related constructs, including burnout and psychological flexibility, and one study addressed meaningful activity.

Structural validity was assessed for 22 instruments (17 of which were rated as very good), internal consistency in 19 (18 of which were rated as very good), construct validity in 16 (8 of which were rated as very good), content in 5 (1 of which was rated as very good), and development in 4 (none of which were rated as very good).

Nineteen of the 20 included instruments were validated using civilian populations, with the Navy Climate Index being the only instrument developed and evaluated to measure the psychological climate of a military work environment. No instruments were specifically designed or validated for veterans.

**Conclusions:** Our review identified 20 instruments that measure well-being related to employment or other meaningful activity. Based on the component measures of validity, we believe the Utrecht Work Engagement Scale, Maslach Burnout Inventory-General Survey, and Satisfaction with Job Life Scale are preferable in assessing well-being related to employment or other meaningful activity.

### **P167: Improving Clinical and Affective Outcomes in Military and Police: Examination of a Transdiagnostic Treatment Paradigm**

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<sup>1</sup>University of Manitoba

**Introduction:** Mental health diagnoses such as PTSD, anxiety, and depression are prevalent in military and veteran personal. Despite improvements in and greater access to psychological and pharmacological treatment, clinical outcomes are less favourable in military and veteran populations than in the general public. It has been hypothesized that anhedonia and deficits in positive emotions may account for some of these differences. However, contemporary cognitive behavioural treatments have been observed to be less impactful on positive affect (PA), and anhedonia despite PA being a strong predictor of quality of life and social-emotional functioning. Therefore, interventions that target anhedonia and PA may be ideally suited to the military and veteran population. Our study examined outcomes of a novel transdiagnostic treatment paradigm designed to promote the experience of PA in a treatment resistant military, police, and veteran sample.

**Methods:** Thirteen participants (to date) were recruited from the Winnipeg Operational Stress Injury Clinic, following no or partial response to a first-line treatment. Participants completed a 6-week intervention designed to promote PA and reduce anhedonia. Participants completed symptom, affect, and quality of life measures throughout treatment. Trauma symptoms were assessed by the PTSD Checklist (PCL-5), depression by the Patient Health Questionnaire (PHQ-9), affect by the Positive and Negative Affect Schedule (PANAS) and quality of life by the Quality of Life Enjoyment and Satisfaction Questionnaire (QLSES). Paired t-tests were conducted to examine pre-treatment to post-treatment changes.

**Results:** Preliminary results demonstrate significant reductions in negative affect ( $t = 3.035$ ,  $df = 12$ ,  $p = .005$ ,  $d = .842$ ) and trauma symptoms ( $t = 1.915$ ,  $df = 12$ ,  $p = .040$ ,  $d = .531$ ) after treatment. Additionally, changes in depression ( $t = 1.310$ ,  $df = 12$ ,  $p = .107$ ,  $d = .340$ ), and positive affect ( $t = -1.325$ ,  $df = 12$ ,  $p = .105$ ,

$d = -.367$ ) are trending toward significance in our small sample. However, quality of life showed no change over the course of treatment ( $t = -.476$ ,  $df = 11$ ,  $p = .322$ ,  $d = -.137$ ). We expect to have 25-30 participants by the time of the presentation of this study.

**Conclusions:** In our treatment resistant sample, PTSD and negative affect have shown improvements after a brief PA treatment. Inconsistent with predictions, no changes to self-reported quality of life were observed. Nonetheless, preliminary data shows this to be a promising treatment with implications for treatment non-responders, and further supports the role of PA as a construct of clinical importance for military, police and veterans. Future randomized controlled trials are warranted.

### **P169: Exploring Integrative Restoration (iRest): An adjunct therapy for trauma-exposed active/retired military and public safety personnel**

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**Program/Intervention Description:** With ongoing treatment evolution for active/retired military members, and public safety personnel (PSP), a look into holistic and/or adjunct therapy approaches have increased. One such application being used with trauma exposed professionals is Integrative Restoration, or iRest. iRest is a meditative process of self-inquiry, during which attention is oriented in a structured way toward specific types of experiences, considering mind, emotions, and the physical body. Preliminary studies to explore the efficacy of this practice have shown promising results that support emotion regulation, and increased quality of life for participants. Given the limited literature on this intervention, and especially within this specific population in Canada, our goal is to explore the uptake of iRest and its impact on the recovery for active/retired military members and PSP.

**Evaluation Methods:** We have conducted a chart review of inpatients accessing trauma and/or addictions treatment from a private mental healthcare facility located in Ontario, Canada. Our sample consists of approximately 350 patient electronic health records of active military, veterans, and PSP. Initial analyses used descriptive statistics to examine who did and did not participate in iRest to understand the demographics and clinical variables of individuals who chose to participate in this intervention. Future analyses will be used to explore the greater impact the intervention has on the recovery journey of these patients.

**Results:** Early analysis shows that gender may be a factor in who participates, with women choosing to participate in iRest more than men. Occupation may also be a factor as results indicate that EMS, police, and firefighters are more likely to

participate than not, as opposed to active military or veterans whose rate of participation is lower. It is expected with further analysis we will determine other factors and impacts iRest has on its participants and their clinical outcomes.

**Conclusion:** The results will likely provide some insight into the variables that influence the uptake of this adjunct trauma treatment intervention. Additionally, we are hoping to comment on the impact of this intervention, thereby addressing that paucity of research in this area. Given this gap in knowledge, our research may support the need for further investigation into adjunct trauma treatments, as well as treatment decisions for PSP and military/ veterans

### **P172: A Scoping Review of 2SLGBTQI+ and BIPOC Military Veterans' Mental Health Data Across Canada**

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<sup>1</sup>Nova Scotia Health Authority; <sup>2</sup>Dalhousie University; <sup>3</sup>Horizon Health Network

**Introduction:** Data on 2SLGBTQI+ and BIPOC Canadian Military Veterans' mental health are needed to develop and improve their mental health services. It is not clear to what extent such data are available and connected across sources. As an extension of a prior scoping review from the authors (Rudnick et al., 2022), the purpose of this scoping review was to examine available data repositories of Canadian (military) Veterans who are BIPOC and/or 2SLGBTQI+ and have experienced mental health challenges. Additionally, the authors have searched for published ways to access and/or find evidence of coordination across these data repositories.

**Methods:** We conducted a scoping review of "white" and "grey" literatures to identify Canadian Veteran mental health data sources, any connection between them, and policies or guidelines related to information sharing across them. This scoping review followed the guidelines for scoping reviews outlined by the Joanna Briggs Institute (Peters et al., 2015) and used the Covidence™ systematic review software to aid in the project execution. Researchers conducted systematic and manual searches throughout a variety of potential sources using pre-defined criteria. Two authors then independently conducted a title/abstract review and a subsequent full text review of relevant sources. Authors then conducted a thematic analysis on the final resultant sources.

**Results:** Screening resulted in a total of four sources (representing two unique data sets) to be included in the final thematic analysis. One of these data sets within the sources was from the Canadian Armed Forces Members and Veterans Mental Health Follow-up Survey, which contained some data related to race/ethnicity. The other data set was the most recent Canadian Census, which had a multi-option question about gender. While use is limited, these sources could be



useful to provide an understanding of BIPOC Canadian Military Veterans and some individuals within the 2SLGBTQI+ community. While these data sources did not contain information about mental health and related symptoms, it may be possible to connect or compare them with other data sources of statistics Canada that contain some of the related information. No policies or guidelines were found that specifically address information sharing across these datasets.

**Conclusions:** Given the narrow scope of this review, it was difficult to find data that fit within the parameters of the project. There are few datasets available with regards to 2SLGBTQI+ & BIPOC Military Veterans in Canada; yet this may be improved in future iterations of existing datasets related to Canadian Veterans.

### **P173: Peer Feedback on the Operational Stress Injury Social Support Program (2013-2018)**

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**Program/Intervention Description:** Canadian Armed Forces (CAF) members and Veterans living with Operational Stress Injury (OSI) may demonstrate behaviours such as a lack of energy, difficulty maintaining daily activities, reduced passion/enthusiasm, social isolation, anxiety, depression, and anger/aggression. The Operational Stress Injury Social Support (OSISS) program provides peer-to-peer support across Canada, for CAF members and Veterans experiencing an OSI, and their families. OSISS has utilized a feedback form for several years (2011-present), which has demonstrated positive endorsement of the program. An overall understanding of the evaluation form responses is necessary to describe the program, the experiences of peers, and areas for improvement.

**Evaluation Methods:** Since 2011, a feedback form of four closed-ended questions, and one open-ended question has been used to collect quantitative and qualitative feedback from those who participated in OSISS. A subset of data (anonymized responses from 2013-2018) were analysed due to the longest standing consecutive years recorded pre-Covid-19 pandemic. Quantitative analyses were completed via Microsoft Excel, and provide insight on general perceptions of the program/services. Qualitative responses were copied into a word document and imported into NVivo12 to be analyzed with a reflexive thematic approach.

**Results:** N=1904 feedback forms were completed from 2013-2018; it is unclear, how many respondents consecutively completed the form each year. National response rates per year ranged from 29-34%. Quantitative findings are based on the responses of those who completed the form, which consists of the following four prompts: i) I received timely services, ii) The support I received was appropriate for my situation, iii)

OSISS made a positive difference in my life, iv) I would recommend OSISS to someone else. In general, OSISS Peers indicated strong agreement with the statements above, program-wide during this timeframe with feedback indicating strongly agree/agree at a rate of 92-99% in these four areas. Responses to the open-ended question provided further insights on issues and benefits of the program. Some participants provided several sentences to paragraphs while others provided one-word answers. Five main themes emerged from the data: i) Support resources; and guidance; ii) "I matter"; iii) "Variety and Flexibility of OSISS"; iv) Diverse programming for all peers; and v) Suggestions for improvement.

**Conclusions:** OSISS has a positive impact on participants and appears to be highly valued by those involved. Future evaluation will consider a greater scope of questions, online completion options, and response evaluation of 2018-2024. Online forms used for data collection may improve accessibility and response rates.

### **P174: A Longitudinal Examination of Suicidal Behaviours among Individuals with Mental Disorders in the Canadian Armed Forces**

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<sup>1</sup>University of Manitoba

**Introduction:** A high percentage of Canadian Armed Forces (CAF) members and veterans will be diagnosed with a mental disorder, and many also experience suicidal behaviours. This study examined demographic characteristics, potentially protective factors, and distal and proximal risk factors that may be related to suicidal behaviour (ideation, plans and attempts) over a 16-year period among CAF members and veterans who met criteria for a mental disorder at baseline.

**Methods:** This study utilized data from the 2018 CAF Members and Veterans Mental Health Follow-up Survey (n = 2,941) with respondents from the 2002 Canadian Community Health Survey: Canadian Forces Supplement. Logistic regression analyses were conducted using subsamples with a lifetime diagnosis of a) major depressive episode, b) posttraumatic stress disorder, and c) any anxiety disorder (generalized, social phobia, panic) assessed with a structured diagnostic interview in 2002.

**Results:** Demographic characteristics at baseline associated with suicidal behaviour among most subsamples included age, environmental command, and rank. Risk factors at baseline and/or between 2002 and 2018 included prior suicidal behaviour, comorbid mental disorder, child maltreatment, self-medication and avoidance coping, work stress, number of and exposure to traumatic experiences, persistence/recurrence of mental disorder, current comorbid disorder, alcohol use disorder, having released from service, and number of deployment-associated experiences were associated with

suicidal behaviour among most subsamples. Protective factors against suicidal behaviour at baseline and/or between 2002 and 2018 included problem-solving coping and social support.

**Conclusions:** Findings identify characteristics of those with mental disorders who may be at greatest risk for developing suicidal behaviour and who are in need of further interventions.

### **P178: Women Veteran's Experiences, Perspectives and Mental Health Impacts of Encounters with Children During International Operations**

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<sup>1</sup>Mount Saint Vincent University; <sup>2</sup>MacDonald Franklin OSI Research Centre; <sup>3</sup>Veterans Affairs Canada; <sup>4</sup>Royal Military College of Canada; <sup>5</sup>Canadian Institute for Military and Veteran Health; <sup>6</sup>Dallaire Institute for Children, Peace, and Security; <sup>7</sup>Centre for Addiction and Mental Health

**Introduction:** Over 125,000 Canadians have served in more than 50 operations in the past 70 years. Yet, despite women's long-standing international service and evidence that women serving in the military experience more severe mental health outcomes than their male counterparts, there remains a dearth of research on the mental health impacts of their international operational experiences. This multi-phased Participatory Action Research (PAR) aimed to understand the gendered experiences of Canadian Armed Forces (CAF) Veterans who have served in international deployments, and particularly the impacts of encountering children. This research has three primary areas of focus: to improve our understanding of women Veteran's experiences encountering children during international deployments; to identify the mental health impacts of encountering children in conflict for women Veterans; and to identify gender responsive training and support for military personnel who are deployed to regions where children are present in armed conflicts.

**Methods:** Using a PAR framework, thirty-nine (n=39) participants, including Veterans, health professionals, and researchers, engaged in a series of six workshops to explore the mental health impacts of encountering children during international deployments to identify actions for prevention and enhanced treatment. The final PAR workshop involved fifteen (n=15) women, including Veterans (n=7), health professionals (n=1), and researchers (n=7), to expand on previous findings from a gender responsive perspective. The PAR approach involved iterative cycles of reflection, data collection, and action, with strong involvement of, and direction from, an interdisciplinary team of key stakeholders.

**Results:** Exploring the mental health impacts of encountering children during international deployments with women Vet-

erans exposed the deep gendered realities of military culture and the lack of gender responsive training, prevention, and treatment within the CAF. This research identified the importance of centering women Veteran's experiences, voices, and recommendations for change. Participants identified recommendations for enhancing training and support services to specifically address the needs and concerns of women. From a research design perspective, this trauma-informed, Veteran-centered, and action-oriented project has also resulted in key learnings related to the development of research protocols, implementation, analysis, and knowledge dissemination in women Veteran mental health.

**Conclusions:** Research with women Veterans has helped to fill important gaps in our understanding of Veteran mental health, particularly as it relates to women's experiences encountering children during international deployments. Participants in this project helped illuminate how gender inequality remains a key issue affecting the lives of women in the CAF, as well as highlighting the range of possibilities for effective change.

### **P182: Current Research on Matching Trauma Focused Therapies to Veterans: A Scoping Review**

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**Introduction:** Trauma focused (psycho)therapies (TFTs) are often used to treat PTSD of Military veterans. The most established of these therapies are: prolonged exposure (PE), cognitive processing therapy (CPT) and eye movement desensitization and reprocessing (EMDR). However, research thus far has not conclusively determined predictors of TFTs' success in this population. This scoping review's objectives are: 1) to explore whether it is possible, based on currently available evidence, to match TFTs to veterans to maximize their outcomes; 2) to identify possible contraindications and adaptations of TFTs for this population; 3) to identify gaps in the literature to guide future research.

**Methods:** Standard scoping review methodology (Arksey & O'Malley, 2005; Peters et al., 2015) was used throughout this review. Authors conducted searches of both "white" and "grey" literature using pre-defined criteria which resulted in 4963 unique items identified for potential review. Following title and abstract screening and full-text analysis, 187 sources were included in the review. Upon data extraction, the authors conducted a standard thematic analysis to identify common themes, discrepancies between sources, knowledge gaps, and developed a narrative summary.

**Results:** The 187 included publications most often studied CPT and PE (n=115) rather than EMDR (n=30). While there was a variety of populations studied throughout this research,

most (n=126) of these articles addressed PTSD symptoms as their primary outcome. Treatment engagement, attrition, and satisfaction were also relatively common outcomes (n=33). Attrition rates were slightly higher for PE versus CPT. TFTs, particularly CPT and PE, were at least partly effective for at least half of participating service users, with mostly moderate effect sizes (including for service users with comorbidities such as substance use disorders and psychotic disorders) and some reduction of effectiveness within months to years after the end of treatment. CPT and PE were more effective than EMDR and other treatments in some studies but not different in effect than EMDR and other treatments in other studies. There was variance in the methodological quality of included studies.

**Conclusions:** The current literature on TFTs to treat PTSD in Veterans contains several knowledge gaps, including regarding treatment matching. Consistent evidence across studies to support treatment matching for Military Veterans was not found. Future research should examine effectiveness of these treatments using multiple sources of outcomes, longer time periods, combination with other treatment, outcomes outside of PTSD symptoms (such as functioning) and resilience.

### **P183: Suicidal Behaviour and Perceived Need for Care Amongst Canadian Armed Forces Members and Veterans**

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**Introduction:** Suicide is a major public health concern. A heightened risk of suicidality has been shown among military members and veterans. In the past, suicidal behaviour (i.e., ideation and attempts) has been treated as a by-product of depression. Recent literature shows that suicidal behaviour exists independently of depression and can be observed among individuals without any pre-existing mental health disorders. In the general population, individuals with suicidal behaviour have shown higher rates of help-seeking, suggesting an increased need for care. The perceived needs of CAF members and veterans with suicidal behaviour need to be better understood to identify unmet needs, address potential barriers to accessing care, and improve suicide prevention.

**Methods:** This study utilizes data from the 2018 Canadian Armed Forces and Veterans Mental Health Survey (CAFVMHS), a 16-year follow-up of 2941 CAF Regular Force personnel originally sampled as part of the 2002 Canadian Community Health Survey – Canadian Forces Supplement (CCHS-CFS), where 65% of the 2002 sample transitioned from active service to veteran status by 2018. CAFVMHS asked respondents if they experienced suicidal thoughts, plans, and attempts. The Perceived Need for Care Questionnaire asked respondents about the type, number, and frequency of care they received for their emotions, mental health, and substance abuse. Further

questions asked if their needs were met or not, and why not. Respondents were also asked about their healthcare utilization (i.e., frequency and type), specific to mental health needs.

**Expected Results:** The project is currently in the analysis stage. Results will be available for dissemination at the 2024 CIMVHR conference. Expected outcomes.

**Conclusion:** This will be a novel examination of perceived need for care among those with suicidal behaviour in a representative sample of Canadian military personnel. To date, there has been no examination of suicidality by those with and without a mental health disorder and its relationship to the perceived need for care in this population. Results could highlight the need for mental health treatment among individuals with suicidality who have not followed the typical pathway through a mental disorder diagnosis. These findings will create awareness of the importance of screening for suicidality independent of a mental disorder diagnosis, and provides an opportunity to address current unmet need for service in this vulnerable group.

### **P184: Supporting those who Support Transition: The development and pilot of experiential training for Transition Unit Staff**

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**Introduction:** CAF Transition Unit Alberta/Northern Canada (TU AB/N) consists of four Transition Centers who collectively provide services to military members and their families as they transition out of the military into civilian life. While some members require minimal support in the transitional phase, the ill and injured can face a myriad of challenges and exhibit a wide array of emotions and behaviours as they deal with mental health issues arising from operational experience, unique stresses related to major life-changes and frustrations associated with lengthy medical and administrative processes. The staff supporting these supported members and their families are neither mental health professionals, nor are they equipped with all of the required tools for properly handling such complex situations and needs. Nonetheless, they provide support, care, mentorship and guidance to dozens of these members per week. There is always a danger that the individuals who work at the TCs will, themselves, fall victim to the very stresses they are guiding supported members through. A 2-day experiential workshop for TU AB/N staff was developed and delivered at the request of the Commanding Officer of TU AB/N with the aim of better equipping staff to care for both themselves and those they serve.

**Methods:** In consultation with the TU AB/N, an experiential workshop had 2 primary foci: (1) strategies for working with supported members; (2) strategies for maintaining personal well-being. To evaluate the acceptability and appropriateness of both content and delivery, we collected verbatim responses from participants during and at the end of the workshop. Anonymous feedback was collected via an online questionnaire and post program survey.

**Results:** Participants reported the overwhelming majority of the content was appreciated, appropriate and helpful. They indicated that the experiential nature of the workshop and multiple facilitators was engaging and differed from many other training opportunities.

**Conclusions:** The results of this pilot workshop demonstrate the importance and utility of providing relevant information in an experiential manner to promote the well-being of TU staff and the members they support.

### **P185: Cascading Resilience: An updated scoping review of digital health interventions for military members, veterans, and public safety personnel**

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**Introduction:** Accessible mental health supports are essential for military members, veterans, and public safety personnel who are at increased risk of mental health challenges. These populations often go untreated, however, due to unique barriers to mental health care. Mental health treatment delivered via apps or websites (i.e., digital mental health; DMH) offer an accessible alternative to in-person therapy. Given the high use of apps, it is crucial to evaluate their effectiveness. We aimed to synthesize the current literature on apps focused on enhancing PSP, veterans, and MM's resilience or well-being. A multidimensional well-being model, I-COPPE (interpersonal, community, occupational, physical, psychological, economic, and overall well-being) was used as a framework guiding the scoping review.

**Methods:** A search of six databases was conducted using key terms based on: (1) population, (2) resilience and well-being related constructs, and (3) web- or mobile-based programs. At all levels of screening, two researchers reviewed each article independently. Data was extracted and recorded to include relevant study characteristics: program name and description, target population, number of participants, therapeutic approach, results, limitations, and I-COPPE dimension supported. A narrative synthesis was performed to summarize the eligible studies.

**Expected Results:** In total 44 articles were included in the study. There were 39 unique resilience and/or well-being apps/web-based programs for MM, PSP, and/or veterans. The majority of programs focused on veteran populations (75%). In total, 51% of programs relied on cognitive behavioural approaches, and most aimed to support PTSD-related symptoms. In consideration of the I-COPPE model, a majority supported psychological well-being, followed by interpersonal, and physical well-being. The majority of apps were believed to support more than one domain of well-being. The main methodologies used in the literature to evaluate DMH programs include: randomized control trials; quantitative methods (i.e., quasi-experimental design, correlational evaluations), and qualitative methods. The most common limitations were attrition and small sample size, limiting the generalizability of findings.

**Conclusions:** DMH interventions for MM, PSP, and veterans, appear promising due to their accessibility and scalability. However, more research is needed to determine whether DMH interventions are an effective alternative to in-person mental health care. The current review contributes to the literature by compiling evidence of DMH interventions and the domains of well-being supported by and the therapeutic orientation of these programs. Our review revealed that most DMH interventions were developed for veterans, with a cognitive behavioral framework and with a psychological well-being focus.

### **P187: Cannabis Use and Psychotherapeutic Outcomes for Posttraumatic Stress Disorder in Canadian Military and Veterans**

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**Introduction:** Canadian Armed Forces members and veterans are increasingly choosing cannabis to manage mental health symptoms, including those of Post-Traumatic Stress Disorder (PTSD). Although psychotherapeutic treatments are strongly recommended for PTSD, there is a lack of high-quality research to inform clinical practice regarding the potential impacts of cannabis use on treatment outcomes. The little research that has examined cannabis use and psychotherapeutic treatment for PTSD has mixed results. Some research has found worse treatment outcomes in cannabis users, while other studies have found no differences between users and non-users. There is also a lack of detailed information on cannabis use characteristics (i.e., frequency, THC potency, CBD:THC ratio) of CAF members and veterans and how these may relate to treatment outcomes. Further, little is known about CAF members' and veterans' experiences of cannabis use during psychotherapeutic treatment

**Methods:** This mixed-methods study will utilize a pre-post-follow-up design to examine psychotherapeutic treatment outcomes of 36-45 treatment-seeking CAF members and vet-



erans with clinical or sub-clinical PTSD. Multi-level modelling will be used to assess whether the frequency of cannabis use predicts psychotherapeutic outcomes. Additionally, a series of regression analyses will examine the potential relationships between cannabis-use characteristics and psychotherapeutic outcomes. Thematic analysis of open-ended questions will improve understanding of military members and veterans' experiences of using cannabis during treatment.

**Results:** 17 participants are currently enrolled in the study, with 8 having completed their participation. Recruitment is ongoing, and we anticipate having preliminary results in August 2024, and potentially getting close to our minimum sample size of 36 by October 2024. Given the mixed findings in previous studies, results are difficult to predict. We hypothesized that increased cannabis use frequency would predict poorer treatment outcomes, based on the literature implicating high frequency of use of cannabis in cognitive impairments and more severe mental health symptoms. Further, we hypothesized that higher THC dose/ratio will predict poorer response to treatment among cannabis users, and that higher CBD:THC ratio will predict improved response to treatment among cannabis users based on mental health symptoms associated with higher THC cannabis products.

**Conclusions:** We expect this research to increase understanding of the potential impacts of cannabis use on PTSD treatment outcomes, and explore military and veterans' experiences of cannabis use in this context. Findings will inform clinical recommendations regarding cannabis use during treatment, and help military and veterans make more informed decisions regarding their cannabis use choices.

### **P190: Ketamine Treatment in Canadian Armed Forces Veterans: Investigating patient experiences and outcomes**

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<sup>1</sup>Western University; <sup>2</sup>Parkwood Institute Operational Stress Injury Clinic; <sup>3</sup>Lawson Health Research Institute; <sup>4</sup>McMaster University; <sup>5</sup>Trinity Western University; <sup>6</sup>York University

**Introduction:** In recent years, the rapid and robust effect of ketamine treatment for treatment-resistant depression (TRD) has been observed in several Randomized Controlled Trials (RCTs) and meta-analyses. These encouraging results have prompted the exploration of using ketamine in the management of similarly debilitating, chronic, and treatment-resistant conditions – including posttraumatic stress disorder (PTSD). Ketamine reliably produces *dissociative* experiences when administered to patients, making some clinicians wary of using this agent to treat individuals who suffer from pathological dissociative experiences as part of their PTSD symptomatology.

ogy. Research is thus urgently needed to better understand the experiences and outcomes of patients receiving ketamine therapy, particularly those who experience dissociative symptoms related to their diagnosis.

The study aims to characterize the experiences of Canadian Armed Forces (CAF) Veterans who have previously received ketamine treatment, and determine whether or not patients with the *dissociative subtype* (DS) of posttraumatic stress disorder (PTSD) derive similar benefit from ketamine treatment as compared to their non-dissociative counterparts.

**Methods:** The study population will include 20 participants; 10 CAF Veterans with DS-PTSD (Dissociative Subtype of PTSD), and 10 CAF Veterans with non-dissociative PTSD. This study will utilize a mixed methods design consisting of semi-structured interviews administered over Microsoft Teams, and retrospective chart review. Interviews will be subjected to thematic analysis, and treatment responses between groups will be compared using split-plot ANOVAs for each outcome variable.

**Expected Results:** Findings will characterize the subjective experience of ketamine-induced dissociative states in patients with DS-PTSD, while also identifying potential overlapping features that are present in both conditions. Potential differences in outcome measures of symptomology (PTSD and Depression symptom severity) between patients with Non-Dissociative PTSD and those with DS-PTSD who have received ketamine treatment will be examined.

**Conclusion:** This study will inform clinical decision-making and future policies regarding the use and recommendations for ketamine as a viable treatment option for patients. If patients with DS-PTSD do not respond well to ketamine treatment, it would be prudent to screen for this subtype and consider other treatment alternatives for these patients. Conversely, if this subgroup is found to respond similarly to patients with non-dissociative PTSD, it would suggest that pathological dissociative experiences are not necessarily a contraindication for ketamine treatment.

## PRIMARILY PHYSICAL HEALTH AND WELL-BEING

### Podium Presentations

#### **1C01: Assistive Technology – Powered Mobility Devices: An exploration of lived experience of powered mobility devices in armed forces veterans with limb loss and loss of use of limb**

**Kersey, Thomas, PhD<sup>1,2</sup>; Engward, Hilary, PhD<sup>1,2</sup>**

<sup>1</sup>Veterans and Families Research Institute (UK); <sup>2</sup>Anglia Ruskin University (UK)

**Introduction:** Very little is known about what makes Assisted Technology (AT) i.e. powered wheelchairs useful, what presents as barriers to their use and opportunities they provide from the users perspective. This study sought to understand how AT aids were used in the everyday living by veterans with disability.

**Methods:** Qualitative Descriptive Research (QDR) (Sandelowski, 2010) was used to gather insights from veterans with limb differences, using two methods of data collection: In-depth interviews (n=15) and point and shoot pictures and videos (n=10) to provide broad insight into phenomena as experienced/lived by individuals (Sandelowski, 2010; Doyle, Brady and Byrne, 2016).

**Results:** Two overarching themes ran through the data: Socio – psycho aspects: the effect that assistive technology has on the individual wellbeing and family and barriers to uptake and, Practicalities of Assistive Technology: mobility equipment providers, car and transportation, storage, recycle reuse and scrap the cost of disability.

**Conclusions:** A key finding from this report is that whilst AT are a small part of living with disability, the psychological and social benefits on both the user and their family make AT a vital aspect of living life adaptively.

### **6A03: Prevalence of Chronic Non-cancer Pain among Military Veterans: A systematic review and meta-analysis of observational studies**

*Rehman Qureshi, Abdul, MD (Cand)<sup>1</sup>; Patel, Mansi, MSc<sup>2</sup>; Neumark, Sam, MD (Cand)<sup>3</sup>; Wang, Li, PhD<sup>2</sup>; Couban, Rachel, MA MSt<sup>2</sup>; Sadeghirad, Behnam, PhD<sup>2</sup>; Bengizi, Alla, MSc (Cand)<sup>2</sup>; Busse, Jason, PhD<sup>2</sup>*

<sup>1</sup>Khalifa University (United Arab Emirates); <sup>2</sup>McMaster University; <sup>3</sup>University of Toronto

**Introduction:** Chronic non-cancer pain is common among military veterans; however, the prevalence is uncertain. This information gap complicates policy decisions and resource planning to ensure veterans have access to healthcare services that align with their needs.

**Methods:** Following Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols, we searched MEDLINE, EMBASE, PsycINFO, CINAHL and Web of Science from inception to 9 February 2023 for observational studies reporting the prevalence of chronic non-cancer pain among military veterans. We performed random-effects meta-analysis to pool pain prevalence data across studies and used the Grading of Recommendations, Assessment, Development and Evaluation approach to evaluate the certainty of evidence.

**Results:** Forty-two studies that included 14 305 129 veterans were eligible for review, of which 28 studies (n=5 011 634)

contributed to our meta-analysis. Most studies (90%; 38 of 42) enrolled US veterans, the median of the mean age among study participants was 55 years (IQR 45-62) and 85% were male. The pooled prevalence of chronic non-cancer pain was 45%; however, we found evidence of a credible subgroup effect based on representativeness of the study population. Moderate certainty evidence found the prevalence of chronic pain among studies enrolling military veterans from the general population was 30% (95% CI 23% to 37%) compared with 51% (95% CI 38% to 64%) among military veterans sampled from populations with high rates of conditions associated with chronic pain (p=0.005).

**Conclusions:** We found moderate certainty evidence that 3 in every 10 military veterans from the general population live with chronic non-cancer pain. These findings underscore the importance of ensuring access to evidence-based care for chronic pain for veterans, and the need for prevention and early management to reduce transition from acute to chronic pain. Further research, employing a standardised assessment of chronic pain, is needed to disaggregate meaningful subgroups; for example, the proportion of veterans living with moderate to severe pain compared with mild pain.

## **Poster Presentations**

### **P146: The Impact of COVID-19 on the Veteran Population: Evidence from the Trends in Scottish Veterans Health Study**

*Bergman, Beverly, PhD<sup>1</sup>; Mackay, Daniel, PhD<sup>1</sup>; Pell, Jill, MD<sup>1</sup>*

<sup>1</sup>University of Glasgow (Scotland)

**Introduction:** There have been few epidemiological studies on the impact of the SARS-CoV-2 (COVID-19) pandemic on the Veteran population, other than on specific aspects such as mental health, and none in the UK. We used data from the Trends in Scottish Veterans Health cohort, augmented with nationally-collected COVID-19 data, to explore the risk of hospitalisation and death associated with COVID-19 infection in Veterans resident in Scotland, in comparison with matched non-veterans.

**Methods:** Retrospective cohort study of 71,000 Veterans and a comparison group of 230,000 people with no record of military service matched for age, sex and geography, using Cox proportional hazard analysis to explore the risk of hospitalisation with COVID-19 and COVID-19-associated death overall and by birth cohort, sex and length of military service.

**Results:** Between 1 January 2020 and 31 December 2021, 564 (0.79%) Veterans had been hospitalised with COVID-19, compared with 1728 (0.75%) non-veterans. The Cox model showed no significant difference overall between Veterans and non-veterans, p=0.800. Subgroup analysis showed that the risk was increased in older, short-serving (<20 weeks)

Veterans who had separated prematurely (Early Service Leavers (ESL). There was no overall difference between Veterans and non-veterans in respect of COVID-19-associated deaths,  $p=0.993$ , but subgroup analysis showed a non-significant reduced risk of death in Veterans aged 61-70 years, and a 38% higher risk in Veterans aged over 70 years which almost reached statistical significance,  $p=0.054$ . The increased risk was only partially explained by socio-economic status and common co-morbidities including cardiovascular and respiratory conditions, but we had no data on domestic circumstances or care home residence.

**Conclusions:** Overall, prior military service was not a risk factor for either hospitalisation or death associated with COVID-19. Older ESL were at increased risk compared with non-veterans, but military service is unlikely to have been causal. The risk of death was increased in the oldest Veterans and further studies are needed to explain this once Scotland's 2022 census data become available for linkage.

### **P149: Common Interventional Procedures for Non-cancer Chronic Spine Pain: A clinical practice guideline**

**Busse, Jason, PhD<sup>1</sup>**; Genevay, Stéphane, MD<sup>2</sup>; Agarwal, Arnav, MD<sup>1</sup>; Standaert, Christopher, MD<sup>3</sup>; Carneiro, Kevin, MD<sup>4</sup>; Friedrich, Jason, MD<sup>5</sup>; Ferreira, Manuela, PhD<sup>6</sup>; Verbeke, Hilde, MD<sup>7</sup>; Brox, Jens, MD<sup>8</sup>; Xiao, Hong, MD<sup>9</sup>; Virdee, Jasmeer<sup>10</sup>; Gunderson, Janet<sup>11</sup>; Foster, Gary<sup>12</sup>; Heegsma, Conrad<sup>12</sup>; Samer, Caroline, MD<sup>2</sup>; Coen, Matteo, MD<sup>2</sup>; Guyatt, Gordon, MD<sup>1</sup>; Wang, Xiaojin, PhD<sup>1</sup>; Sadeghirad, Behnam, PhD<sup>1</sup>; Malam, Faheem, MSc<sup>1</sup>; Zeraatkar, Dena, PhD<sup>1</sup>; Vandvik, Per, MD<sup>13</sup>; Zhou, Ting, PhD<sup>14</sup>; Xie, Feng, PhD<sup>1</sup>; Siemieniuk, Reed, MD<sup>1</sup>; Agoritsas, Thomas, MD<sup>2</sup>

<sup>1</sup>McMaster University; <sup>2</sup>Geneva University Hospitals (Switzerland); <sup>3</sup>University of Pittsburgh (USA); <sup>4</sup>University of North Carolina (USA); <sup>5</sup>University of Colorado (USA); <sup>6</sup>The University of Sydney (Australia); <sup>7</sup>University Hospitals Leuven (Belgium); <sup>8</sup>Oslo University Hospital Ullevaal (Norway); <sup>9</sup>Sichuan University (China); <sup>10</sup>International Trade Centre; <sup>11</sup>Chronic Pain Network; <sup>12</sup>The Canadian Veterans Chronic Pain Centre of Excellence; <sup>13</sup>Innlandet Hospital Trust (Norway); <sup>14</sup>China Pharmaceutical University (China)

**Introduction:** Chronic spine pain is a common, potentially disabling complaint, for which clinicians often administer interventional procedures (e.g., nerve blocks, epidural steroid injections, neurofrequency rhizotomy); however, existing clinical practice guidelines provide inconsistent recommendations for their use and have several important limitations. A 2023 review of 21 clinical practice guidelines on interventional procedures for low back pain concluded: "there was no consistency in recommendations for or against any interventional procedure, even after accounting for the quality of the clinical practice guideline". We developed a clinical practice guideline to clarify the role of interventional procedures in the management of chronic spine pain.

**Methods:** Evidence synthesis teams conducted a network meta-analysis of 132 randomized controlled trials exploring interventional procedures for chronic spine pain, and a systematic review of 60 observational studies reporting long-term and infrequent harms of interventional procedures. The results were presented to an international panel, including clinical experts, methodologists, and four people living with chronic spine pain – including two veterans. The panel considered the balance of benefits, harms, and burdens of each intervention, the certainty of the evidence for each outcome, typical and expected variations in patient values and preferences, and practical issues related to use, acceptability, feasibility, and equity. The panel used the GRADE approach to formulate recommendations and applied an individual patient perspective.

**Results:** Moderate and low certainty evidence demonstrated no benefit of any interventional procedure on pain relief greater than sham procedures, and low to very low certainty evidence supported increase in several serious harms (e.g., deep infection) and harms of moderate magnitude (e.g., prolonged pain or stiffness).

Accordingly, for chronic axial spine pain the panel made strong recommendations against joint radiofrequency ablation with or without joint targeted injection of local anaesthetic + steroid; epidural injection of local anaesthetic, steroids, or their combination; joint-targeted injection of local anaesthetic, steroids, or their combination; and intramuscular injection of local anaesthetic with or without steroids. For chronic radicular spine pain the panel made strong recommendations against; dorsal root ganglion radiofrequency with or without epidural injection of local anaesthetic or local anaesthetic + steroids; and epidural injection of local anaesthetic, steroids, or their combination.

**Conclusions:** The panel concluded that almost all informed patients would choose to avoid interventional procedures for axial or radicular chronic spine pain because all low and moderate certainty evidence suggests no benefit on pain relief vs. sham procedures, and these procedures are burdensome and may result in adverse events.

### **P154: Treatment Preferences among Canadian Military Veterans with Chronic Low Back Pain: A Mixed Methods Cross-Sectional Survey**

**Emary, Peter, PhD<sup>1,2,3</sup>**; Ciraco, Carla, DC<sup>3</sup>; DiDonato, Jenna, DC<sup>3</sup>; Deschambault, Branden, MD<sup>1</sup>; Garas, Andrew, HBScl<sup>1</sup>; Sprague, Sheila, PhD<sup>1</sup>; Busse, Jason, PhD<sup>1</sup>

<sup>1</sup>McMaster University; <sup>2</sup>D'Youville University (USA); <sup>3</sup>Private practice

**Introduction:** In 2023, the World Health Organization released guidelines that recommended in favour of 10 non-surgical interventions for chronic primary low back pain, including exercise, acupuncture, spinal manipulative therapy, and mas-

sage. Although coverage for these services are available to Canadian Armed Forces (CAF) Veterans through provincial health insurance and Veterans Affairs Canada, institutional barriers exist for actively serving CAF members that may limit access to recommended evidence-based treatments. We examined CAF Veterans' use and preferences toward specific health care disciplines and treatment approaches for the management of chronic low back pain, both while serving and after release.

**Methods:** From February to May 2023, we e-mailed a 33-item survey, in English and French, to 1,632 CAF Veterans. CAF Veterans living with chronic low back pain were eligible to complete the survey, which asked about demographic variables, military service, chronic low back pain-related characteristics, and experiences and attitudes toward health care providers and therapeutic approaches for chronic low back pain.

**Results:** Overall, 290 of 1,632 individuals we contacted returned a completed survey (18% response rate). Almost all (98%) CAF Veterans who responded reported living with chronic low back pain for more than five years, and 91% indicated first experiencing low back pain during military service. Seventy-six percent of respondents felt their low back pain was not treated effectively when it first started, and 66% felt that additional management options and expanded access to care may have prevented their low back pain from becoming chronic. Among 12 health care provider options for managing chronic low back pain, respondents most preferred massage therapists, physiotherapists, family physicians, and chiropractors. Least preferred options included orthopedic surgeons, nurses, neurosurgeons, and services provided by other health care providers (e.g., anesthesiologists). The most attended off-base practitioners for low back pain while serving in the military were physiotherapists (39%), chiropractors (35%), and registered massage therapists (30%). Most respondents endorsed that registered massage therapy (70%), physiotherapy (60%), chiropractic care (51%), and occupational therapy (50%) should be available on-base for active-duty military personnel.

**Conclusions:** Most responding CAF Veterans reported that their back pain began while serving in the military and was not optimally managed. Respondents indicated a preference for attending massage therapists, physiotherapists, family physicians, and chiropractors, but advised that massage therapists and chiropractors were not available on-base. Our findings suggest there may be an opportunity to better align on-base health care with evidence-based treatment preferences of Canadian military personnel.

### **P163: Veterans Experiences of Chronic Pain Management Programmes: A Focus Group Study**

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<sup>1</sup>Veterans and Families Research Institute (UK); <sup>2</sup>Anglia Ruskin University (UK)

**Introduction:** Veterans' voices have largely been left out of the conversations around chronic pain in the UK (Engward et al, 2018 Kersey, 2023). The purpose of this study was to understand UK veterans' experiences of attending Chronic Pain Management Programmes (CPMP). Currently there is minimal literature that specifically seeks to understand the veterans' experiences of attending CPMPs and how they might use their learning in their everyday living with Chronic Pain.

**Methods:** To understand current perspectives on CPMP a scoping review was conducted alongside two concurrently running, one focussing on attending veteran specific CPMP (n = 5) and one focussing attending generic NHS/other CPMP (n = 3).

**Expected Results:** Participants identified key aspects of CPMP which participants found helpful/unhelpful in relation to their daily living with CP, Difficulties accessing CPMP provision, Support of CP in primary care, issues specifically relating to being a veteran, the Armed Forces Compensation Scheme, and government work and pension organisations.

**Conclusions:** CPMP are vital in helping veterans understand and live well with their CP, however there are wider issues with support services and benefits, a disjointed health service and variable provision and care for CP within the NHS which influences CP experience and living with CP.

### **P164: Exploring the Impacts of Sex and Gender on the Chronic Pain Management Experiences of Canadian Veterans**

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<sup>1</sup>Western University

**Introduction:** Although sex and gender can impact the injuries sustained and responses to treatments for military personnel, little research has been done to understand how sex and gender impact pain management among Veterans with chronic pain. The purpose of our qualitative study was to explore the unique experiences of Canadian men and women Veterans in managing their chronic pain by evaluating gendered personal, cultural, and system factors.

**Methods:** Twenty-six Canadian Veterans (11 women, 15 men) living with chronic pain participated in semi-structured interviews. Interpretive description was used to analyze the transcripts. One coder performed the thematic analysis, while confirming codes and themes with the research team.

**Results:** Ten Veterans expressed that sex and/or gender had an impact on developing chronic pain, and sixteen Veterans believed that sex and/or gender influenced how you were treated in healthcare, the military, and/or Veteran Affairs Canada (VAC). We identified 4 themes: 1. Differences in expect-



tations for men and women in the military influenced their likelihood of chronic pain, 2. The 'macho mentality' in the military impacts men and women differently, 3. Veterans believed that healthcare providers and VAC have a lack of understanding of chronic pain, especially in women, which impacted the treatment they received, 4. Veterans experience other forms of discrimination which impact their chronic pain.

**Conclusions:** Generic equipment, training, and exercise programs may put women in the military at a higher risk of injuries leading to chronic pain, which identifies the need for sex and gender-specific resources in the military. The 'macho mentality' in the military caused men to push through the pain to continue to work and pressured women to constantly prove themselves. It is crucial to address this mentality and the stigmas in the military, as they can cause military personnel to ignore their pain, leading to chronic pain. Sex and gender biases and other forms of discrimination in healthcare and the VAC may impact a Veteran's access to treatment. More research is needed to explore how men and women Veterans experience chronic pain to better educate stakeholders, as they may benefit from learning about Veterans' needs and the military context.

## MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

### Podium Presentations

#### 1C02: A Rapid Review to Identify Drivers and Barriers of Competitors and Support Personnel Experience at Invictus, the Warrior Games and Winter Adaptive Sports

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<sup>1</sup>MacDonald Franklin Operational Stress Injury Research Centre; <sup>2</sup>Western University; <sup>3</sup>St. Joseph's Operational Stress Injury Clinic

**Introduction:** Military members and Veterans who have been physically or psychologically injured during service benefit from meaningful activities to support their rehabilitation. The Invictus Games provides wounded, injured, and sick active duty and Veteran military members and their families an opportunity to participate in an adaptive sporting event that prioritizes recovery and rehabilitation over competition. This rapid literature review examined the participant experience of competitors and support personnel in the Invictus Games, Warrior Games, and winter adaptive sport programs.

**Methods:** This review adhered to Cochrane's guidelines as its methodological framework (Higgins, 2022), and to the Preferred Reporting Items for Systematic Review and Meta-Analysis - Rapid Review (PRISMA-RR) guidelines for report-

ing standards (Stevens et al., 2018). Utilizing the Self-Determination Theory as our analytical framework, analyses focused on aspects of autonomy, competence, and social-relatedness.

**Results:** This review included 56 published and unpublished articles. Across all included articles, for competitors, social-relatedness (i.e., social connection, such as camaraderie and friendship) and competence (i.e., feeling effective in one's performance and the ability to meet challenges) were identified as the primary motivators for competitors' participation, whereas support personnel are most often driven by observing competitor success and development.

**Conclusions:** Our findings highlight the crucial role of social connection and perceived competency in driving participant motivation. Conversely, we identify competitive pressures and resource disparities as potential detractors from the Games' rehabilitative ethos. Understanding of the participation experience can lead to better support and policy development, and examining drivers and barriers can assist in identifying and prioritizing strategies to optimize participant outcomes in ways that stay true to the participants' and their support personnel's expectations and wishes. Together, findings underscore an urgent need for future research to broaden theoretical frameworks, ensure diversity in participation, and examine the impact of various forms of support to facilitate participation.

#### 1C03: Evaluation of the University of South Australia's Invictus Pathways Program: The early years

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<sup>1</sup>University of South Australia; <sup>2</sup>University of Tasmania (Australia)

**Program/Intervention Description:** UniSA's Invictus Pathways Program (IPP) is motivated by the spirit of the Invictus Games to mobilise the benefits of sport to aid physical, psychological, and social wellbeing. Originally developed to assist Veterans to train for and participate in the Invictus Games, the scope of the IPP has widened to support and improve wellbeing and facilitate post traumatic growth and recovery among participants who are living with physical and mental health conditions. The IPP is a student-delivered program, with supervised UniSA allied health placement students providing individually tailored, one-on-one training and support to participants.

**Evaluation Methods:** Underpinned by a pragmatic approach, data related to participant reach and engagement, and program fidelity were analysed from process documentation collected between 2017 and 2020. Seventy-one semi-structured interviews were conducted with IPP participants, members of their family support network, and university staff to understand the operations of the IPP and program satisfaction and

impact. Interview data were analysed using reflexive thematic analysis. Coding and themes were developed through combined inductive and deductive analytical approaches.

**Results:** There was high fidelity for the student-led exercise training aspects of IPP; however, data collection relevant to participants' psychological outcomes, and non-training IPP events and activities did not always occur as intended. From 2017-2020, 53 veterans participated in IPP, with 63 allied health students completing placements. Qualitative analysis identified four higher order themes: Implementation and fidelity of the IPP, Satisfaction with IPP, Areas of IPP requiring improvement and suggestions for change, and Sustainability of the IPP. Satisfaction was generally high for the IPP, although there were factors that negatively impacted the experience for some participants and their family support network. Suggestions for improvement to program components and delivery aspects were made, including, transition approaches and structured ongoing program evaluation, and the precariousness of IPP funding and sustainability was raised as an ongoing concern.

**Conclusions:** The IPP has had a positive impact on the physical and psychological wellbeing of the veterans who participated in its initial stages. Process evaluation indicated that the IPP's physical activity training components were delivered with high fidelity and participant satisfaction, although there are areas that could be improved. Beyond this is, there is an evident need to secure funding to support the sustainability of the IPP. Ongoing evaluation and program refinement will continue as a means of supporting the wellbeing of veterans living with physical and mental health conditions, and their families.

## 2D02: Working with Women Veterans to Generate Evidence to Support Women Veterans

*MacEachern, Kate, PhD<sup>1</sup>; Rodrigues, Sara<sup>1</sup>*

<sup>1</sup>The Atlas Institute for Veterans and Families

**Brief Description:** Military women in Canada face significant challenges while in service, including harassment, discrimination and exposure to traumatic events (Waruszynski et al., 2019; Waruszynski & MacEachern, 2021). As a result, many continue to face challenges with health and well-being after service and some have shared that a lack of sex and gender specific health supports in the military and Veteran health care systems exacerbate these health outcomes (see Standing Committee on Veterans Affairs, 2023). Women have also been historically underrepresented in studies focused on the health of Veterans in Canada (e.g., Life After Service Survey) making it difficult to provide the evidence needed to create the policies and programs that would provide equitable health care. Developing research projects that focus specifically on women Veterans is an important step to generate this knowledge. However, determining what the critical needs are and what research questions should be asked can have a significant impact on the utility of any research project. Using an ongoing

community-engaged research project as an exemplar, this presentation will discuss how engaging a working group of community members in the research process can enhance the meaningfulness and utility of research and why engagement is particularly salient for research with this population.

**Patient Population:** This presentation will benefit a wide audience including Veterans and service members interested in research and decision makers who rely on evidence for policy and program development.

**Results:** The project engaged the lived experience of women Veterans through the creation of a 14-member working group to support a study examining the prevalence, causes and consequences of women Veterans' unmet health needs. Women were RCMP ( $n=4$ ) and CAF ( $n=10$ ) Veterans from across Canada and from various trades/specialities, ranks and elements. Working group members performed a variety of activities including co-developing research questions, measurement tools and recruitment strategies alongside the project team. This co-developed survey will launch in May 2024 and is expected to provide critical insights into the health and well-being of women Veterans in Canada.

**Conclusions:** This presentation will demonstrate how a working group of individuals with lived experience can work with researchers to develop salient research. Furthermore, we will discuss how this approach can expedite the process from knowledge generation to knowledge translation and use. We will leave participants with tangible ways in which they can successfully engage community members in applied research.

## 3A01: Exploring the Intersectionality of Identity, Race/Ethnicity, Disability, and Sexual Orientation with Physical, Mental, Financial, and Spiritual Well-being among United States Women Veterans

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<sup>1</sup>The University of Alabama (USA); <sup>2</sup>William James College (USA); <sup>3</sup>Deloitte; <sup>4</sup>Self employed; <sup>5</sup>Massachusetts Office of the Veteran Advocate (USA); <sup>6</sup>RAND; <sup>7</sup>Syracuse University (USA); <sup>8</sup>Retired

**Introduction:** Wellbeing is a key goal/indicator of progress around the world for civilian and military-connected populations (Adler and Gutierrez, 2023; Thompson et al 2022; Vogt et al 2019; MacLean, Roach, Banman, Mabior, & Pedlar, 2016). Few studies specifically focus on women veterans' experiences at all (Dodds and Kiernen, 2019), let alone on their wellbeing. This study explores women veterans' wellbeing and how it varies.

**Methods:** The *Assessing the Needs of Women Who Served in the U.S. Armed Forces* web-based survey used modified snowball

sampling methodology. Respondents were women over 18 who served in the U.S. Armed Forces. Nearly 6,000 opened and 4,707 respondents completed the survey, representing every U.S. state and branch of service. Sample was white (75%), African American (11%), Hispanic (7%), American Indian/Alaska Native (3%), and Other (4%); heterosexual (83%), lesbian/homosexual (8%), bisexual (5%), or other (4%). Most were 40 years older (80%).

Each categorical and ordinal variable of interest will be tested with chi-square or Mann-Whitney tests to identify significant differences between the aspects of wellbeing for women veterans. Multivariate logistic regression will examine mental, financial, and spiritual wellbeing indicator variable differences among women veterans by demographic and service-related variables. The overall model fit will be tested using the reported c-statistic and chi-square goodness-of-fit test, followed by methods of selection for the model based on significance level of the variable to enter and stay in the model. All statistical tests will be two-sided with alpha set at 0.05.

**Results:** Half of the respondents reported their health, mental health, and spiritual health as “good,” “very good,” or “excellent” (av. 47%). Similar percentages reported being isolated, feeling unsupported, lacking a sense of purpose, and not finding their role in the community and family to be a source of self-worth and connection to others. We will present how responses vary by demographic and service-related factors. Initial analysis indicates varying factors in women veterans’ needs based on their self-identified race and ethnicity. Further analysis will be done to explore the intersectional variations in women veterans’ wellness indicators.

**Conclusions:** More research is needed on the nature and complexity of women veterans’ wellbeing to guide future public policy and support for these unique women warriors. Bringing this understanding to the research community will pave the way for a more supportive and inclusive environment for all women veterans with attention to disability status, race, ethnicity, and sexual orientation.

### **3A04: Canadian Women Veterans Experiencing Homelessness: What can be learnt?**

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<sup>1</sup>Western University; <sup>2</sup>Lawson Health Research Institute; <sup>3</sup>Dalhousie University; <sup>4</sup>Nova Scotia Operational Stress Injury Clinic; <sup>5</sup>MacDonald Franklin OSI Research Centre

**Introduction:** While Canadian Armed Forces (CAF) Veterans comprise only 1.5% of the Canadian population, national point-in-time data in 2018 indicated that they comprise 4.4% of the homeless community and 1.6% of emergency shelter users. Royal Canadian Mounted Police (RCMP) are also recognized as Veterans in Canada. Women Veterans experiencing

homelessness in the U.S. are at greater risk of homelessness due to unemployment, military sexual trauma, posttraumatic stress disorder, anxiety disorders, lack of housing services available to single women Veterans with children, and service-connected disabilities. There is a significant lack of research on Canadian Women Veterans experiencing homelessness however. This study aims to address Women Veteran homelessness through the development of policy and service guidelines to improve supports.

**Methods:** This study is using a mixed-methods participatory action research approach with a purposive sampling design. Up to 160 Veterans experiencing homelessness and identifying as a woman are being recruited to take part in individual interviews. The qualitative component will gather data regarding lived experiences from women Veterans experiencing or have previously experienced homelessness. Quantitative data such as demographics, history of housing and homelessness, and services accessed will be collected. Up to 200 homeless-serving and Veteran-serving agency staff are also being recruited to participate in focus groups. Qualitative data will be analyzed using a thematic ethnographic analysis strategy to capture the social and cultural interpretations. Quantitative variables include demographic factors such as age, race, ethnicity, sexual orientation, income, and mental and physical illness diagnosis.

**Expected Results:** Service barriers experienced and suggestions to prevent and reduce Women Veterans’ homelessness are being explored. This study also expects to gain a deeper understanding of the intersectionality of gender with other dimensions and to identify the root causes of Women Veterans homelessness. Intersectionalities expected for analyses include Indigenous peoples, mental health diagnoses, parenthood, and past trauma. Military career including duration of service in the CAF or RCMP, year of discharge, location of deployment, number of missions, and type of military occupation will also be analysed. These will be evaluated to co-create gender-specific guidelines and policy interventions. Preliminary results to be presented.

**Conclusion:** This study represents a significant step towards greater attention and advocacy for Women Veterans experiencing homelessness in Canada. Guidelines for policy and practice will be presented to decision-makers to better support Women Veterans. Current knowledge is also severely lacking and the analyses generated from this study will help lay the foundations for future Canadian research.

### **3A05: Focus on Health Equity for Indigenous, Black and Racialized, and 2SLGBTQI+ Veterans: Insights from the Veterans’ Well-Being Community Health Needs Assessment**

**Muralitharan, Maiura, MPH<sup>1</sup>**; Fry, Margaret, MHS<sup>1</sup>; Garland-Baird, Lisa, PhD<sup>1</sup>; Morgan, Elissa Fiona, MPH<sup>1</sup>; McComber, Teri, PhD (Cand)<sup>1</sup>; Léveillé, Josée, BScN<sup>1</sup>; Forest-Briand, Victoria, MPhil<sup>1</sup>; Bethke, Kim<sup>1</sup>

<sup>1</sup>Veterans Affairs Canada

**Introduction:** Equity-deserving Veterans, including Indigenous, Black and racialized, and 2SLGBTQI+ Veterans, experience complex health and well-being challenges. These are shaped by their intersecting identities and lived-experiences, including facing organizational biases and systemic discrimination when seeking resources. Literature demonstrates that equity-deserving Veterans are often underrepresented in the design of programs, policies, and research. Consequently, resources and programs may not sufficiently meet their needs, and may potentially perpetuate their existing health and well-being disparities. To address this, the recent Veterans' Well-Being Community Health Needs Assessment explored the health and well-being strengths, needs, and outcomes of Canadian Veterans. Findings specific to Indigenous, Black and racialized, and 2SLGBTQI+ Veterans can inform inclusive program, policy, and research development for equity-deserving groups.

**Methods:** An aim of this research was to identify health and well-being outcomes of equity-deserving Veterans, and report differences within and across groups. This mixed-methods study included a literature scan, semi-structured interviews and focus groups with Veterans (n=75), and descriptive analysis of 2021 Census and 2022 Canadian Veteran Health Survey data. Data were disaggregated by equity-deserving groups when applicable. Analyses were grounded in intersectional, SGBA+, and life course approaches, influenced by decolonial, anti-oppressive, trauma-informed, and health equity principles.

**Results:** Analyses identified unique and varying outcomes across health and social domains for Indigenous, Black and racialized, and 2SLGBTQI+ Veterans. These included differences in physical, mental, and oral health; community belonging; life skills; employment; housing; and resource accessibility and use. Observed strengths included a smaller proportion of Indigenous Veterans reporting cancer in their lifetime, and a smaller proportion of Black & racialized Veterans reporting a variety of chronic conditions, than their respective counterparts. Disparities included a larger proportion of Indigenous Veterans reporting food insecurity, and a smaller proportion of LGB+ Veterans reporting strong community belonging, compared to their counterparts. Black & racialized women+ Veterans were more likely to report post traumatic stress disorder than their men+ counterparts, as well as women+ Veterans who are not Black & racialized. Accessibility and availability of resources were limited by factors including lack of health care providers' military and cultural competency, systemic discriminatory practices, and rurality.

**Conclusions:** There are differences in the health and well-being outcomes of Indigenous, Black and racialized, and 2SLGBTQI+ Veteran groups. Program, policy, and research efforts must be planned, implemented, and evaluated using intersectional and SGBA+ lenses to effectively identify and address equity-deserving Veterans' unique needs. Prioritizing this approach can foster progress towards health equity for all Veterans.

### **3B04: Measurement Based Care in the Treatment of Chronic Pain at an Operational Stress Injury Clinic: Lessons Learned**

**Holens, Pamela, PhD<sup>1</sup>**

<sup>1</sup>University of Manitoba

**Program/Intervention Description:** Chronic pain is a significant concern among military, RCMP, and Veteran populations who are served by Operational Stress Injury Clinics. This presentation will review the use of measurement based care in the treatment of chronic pain at the Winnipeg Operational Stress Injury Clinic and how outcomes have influenced the progression of treatment approaches used at the clinic over time. Interventions used have included Acceptance and Commitment Therapy, Cognitive Behavioural Therapy, and Pain Reprocessing Therapy, with each treatments offering different types of improvements in chronic pain patients.

**Evaluation Methods:** Evaluation of outcomes in chronic pain patients at the Winnipeg OSI Clinic has been done through examination of pre- and post-treatment self-report measures completed by individuals who have participated in pain groups at the clinic. Primary measures used have included the following: Short-Form McGill Pain Questionnaire, Chronic Pain Acceptance Questionnaire, Pain Disability Index, Tampa Scale of Kinesiophobia, and Pain Catastrophizing Scale. Each of these measures will be described briefly in the presentation and compared in terms of the different information each provides.

**Results:** Results have shown that different elements of the difficulties experienced by individuals with chronic pain appear to be improved by different treatments. Acceptance and Commitment Therapy has helped increase patient's acceptance of their pain condition but had less impact on improvement of pain intensity; whereas Pain Reprocessing Therapy has had greater impact in decreasing pain intensity among participants. Effect sizes for each of the pain-related outcome measures have varied from small to very large.

**Conclusions:** Our program evaluation results suggest that the nature of the treatment benefits found after participation in psychologically-based group treatments for chronic pain varies depending on the focus of that treatment. While acceptance-based treatments appear to provide the most benefit in terms of helping individuals become more accepting of their



pain, newer interventions such as Pain Reprocessing Therapy appear to have more impact on decreasing pain intensity. Further research should be conducted to determine whether some patients are better suited to one chronic pain treatment type than another.

### 3C03: The Veteran Transition Screener an Empirically Informed Measure of Well-being

*Perkins, Daniel F., PhD<sup>1</sup>*

<sup>1</sup>Pennsylvania State University (USA)

**Brief Description:** Transitioning from military to civilian life creates a major life adjustment as the military's structure meets basic needs and forges a cohesive identity of its members through a regimented and communal lifestyle. Thus, as Service members transition, they navigate civilian life with a self-sufficiency that contrasts with the culture and social identity they experienced during military service. This effort intended to develop an empirically based, comprehensive, veteran-focused well-being screener. This screener measures veterans' risks and the support veterans need to enhance and maintain their well-being and aims to guide veteran-serving providers through the use of empirical data to inform their investment decisions as they choose the best program and service components to support veterans' and their families' well-being.

**Patient Population:** The population is providers that support service members who are transitioning to civilian status.

**Results:** The Veteran-Transition Assessment Tool (V-TAT) was developed from The Veterans Metrics Initiative (TVMI), which collected comprehensive data, across life domains, from approximately 10,000 newly separated post-9/11 veterans over nearly 4 years. The development of V-TAT was informed by two dimensions of TVMI research to effectively support at-risk veterans. First, through the TVMI research, specific risk factors were empirically linked to poor well-being outcomes in four life domains (i.e., vocation [employment and education], health [physical and mental], finances [legal and housing], and social relationships). Second, specific, evidence-informed program components were identified that were predictive of success in well-being outcomes. The program components fall into four categories: program content, program process or delivery mechanisms, barrier-reduction strategies, and sustainability techniques.

The V-TAT contains seven sections: background, specific experiences, and five well-being domains (i.e., employment, education, financial, health, and social relationships). Service providers can select the sections given to their clients; however, the background information and specific experiences sections are mandatory as they identify risk factors. To reduce burden, the items have been minimized to the most essential,

and display logic is used to ensure clients only receive items that apply to them.

**Conclusions:** A pilot of the V-TAT was conducted in collaboration with service providers who offer services that address one to multiple well-being domains. The pilot was designed to identify areas for improvement regarding the tool's items, structure, and reporting. The V-TAT was then automated in a system that manages the distribution to clients, analyses of client responses, and generation of client reports. This step will be followed by a wide dissemination of the tool for implementation.

### 3C06: Veterans' Shared Perspectives of Health and Well-Being: Identifying Priorities for Veterans, Service Providers, Policymakers, and Researchers

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<sup>1</sup>Veterans Affairs Canada

**Introduction:** Veterans' perspectives on health and well-being are shaped by their intersecting identities and lived-experiences, including military service. The Veterans' Well-Being Community Health Needs Assessment explored Canadian Veterans' perspectives on their health and well-being (HWB), strengths, and needs. Veterans' lived-experiences were explored in the context of military service, societal norms, and institutional structures, informing priorities for service providers, policymakers, and researchers.

**Methods:** This study was grounded in intersectionality and participatory principles. Over 250 Veteran stakeholders were included in research planning and implementation. Strategic recruitment ensured inclusion of Veterans with diverse sociodemographic and military characteristics. Semi-structured interviews and focus-groups were conducted with 75 participants, achieving data saturation. Open-ended questions captured Veterans' individual and shared perspectives of HWB, strengths, and needs. Thematic analysis was conducted using NVivo 14. Participants' validation of themes ensured credibility and trustworthiness of findings.

**Results:** Veterans' perspectives directly informed these selected themes and priorities. 1) Theme: Veterans perceive their HWB as holistic, interconnected, evolving, and shaped by contextual lived-experiences including military-service. Priority: Policymakers recognize Veteran HWB are holistic and evolving, and one-size-fits-most approach is ineffective to meet needs. Develop responsive policies that consider Veterans' intersecting identities and life-course. 2) Theme: Veterans need military-culturally competent and trauma-informed providers, resources, and organizations. Priority: Service providers learn about military/Veteran culture and the impacts on HWB and

apply trauma-informed and person-centered approaches to care. 3) Theme: Veterans' strengths include supporting, empowering, and advocating for themselves and peers. Priority: Veterans apply evidence to advocate for and inform peers about their unique HWB compared to civilians. Be proactive by discussing HWB history, needs, and goals with providers and support networks. 4) Theme: Veterans' facilitators and barriers to resources are dynamic, overlapping, and contextual. Priority: Service providers, policymakers, and researchers include input, experience, and knowledge of Veterans, families, and networks to support Veterans' HWB. 5) Theme: Equity-deserving Veterans experience disparities in care and support. Priority: Service providers, policymakers, and researchers apply a health equity lens to their work and engage with hard-to-reach (e.g., precariously housed, rural, and remote) and equity-deserving Veterans to address their needs.

**Conclusions:** Veterans' HWB is multifaceted and evolving. Holistic and responsive programs, policies, and research that actively involve Veterans, families, and networks is required. Participatory research ensures Veterans' intersectional identities and contextual lived-experiences contribute to development, implementation, evaluation of inclusive programs, policies, and research. This approach fosters progress to address Veterans' diverse needs and promote equitable access to care and resources.

#### **4E03: Rapid Sequence Induction and Long-term Mental Health Outcomes Post-Combat Injury: Prehospital Interventions in the ADVANCE Cohort Study**

*Dixon Smith, Sarah, PhD<sup>1</sup>; Bull, Anthony, PhD<sup>1</sup>; Bennett, Alexander, PhD<sup>2</sup>*

<sup>1</sup>Imperial College London; <sup>2</sup>Defence Medical Rehabilitation Centre

**Introduction:** During 11 years of operations in Afghanistan, >2,400 British service personnel were wounded in action. Through advances in trauma care and prehospital interventions, many casualties survived injuries previously thought fatal, although long-term outcomes are unknown. The Armed Services Trauma Rehabilitation OutCome [ADVANCE] study, a prospective 20-year project, will investigate this by matching ~600 British military personnel injured in Afghanistan to an uninjured cohort.

This paper explores the impact of prehospital rapid sequence induction [RSI] on long-term mental health outcomes in ADVANCE participants. Typically used in critically injured patients at high risk of aspiration, RSI secures airways quickly, potentially reducing patients' psychological trauma and awareness of pain. It has been theorised inadequately treated acute pain may lead to increased chronic pain and PTSD, and 'preventative analgesia' may protect against this by reducing nociceptive input and inflammatory responses. This study hypothesised RSI administered early in casualty evacuation

would result in better short-term pain control and reduced psychological trauma, thus helping prevent acute posttraumatic pain chronification and development of related mental health issues.

**Methods:** A retrospective review of 538 ADVANCE participants was conducted using injury and RSI data from the UK's Joint Theatre Trauma Registry and outcome data from ADVANCE's baseline collection, completed on average 8 years post-injury. Overall and site-specific pain were evaluated with self-reported numerical scales, and pain-related disability by Oswestry Disability Index [ODI]. Mental health outcomes were assessed with validated clinical questionnaires: PCL-C, PHQ-9, GAD-7 and EQ-5D.

**Results:** 157 participants received RSI: 50 prehospital and 107 at Role III. While no significant differences in pain or related disability scores between RSI and non-RSI cohorts were found when analysed by evacuation stage (site-specific pain: p. 0.014-0.915, ODI: p. 0.212), mental health outcomes differed significantly. Non-RSI participants reported significantly higher rates of PTSD (p. 0.017), depression (p. 0.04), anxiety (p. 0.099) and related lower quality of life (p. 0.022), compared to RSI during prehospital evacuation or Role III, reaching minimal clinical significance for GAD-7 and PHQ-9. The results were most significant between the non-RSI and prehospital cohorts (p. 0.015- 0.032).

**Conclusions:** Contrary to previous studies, prehospital RSI did not significantly affect rates of chronic posttraumatic pain. However, there is evidence of an association between early administration of RSI and improved mental health, continuing up to 8 years post-injury, with potential implications for future management of acute combat trauma and subsequent rehabilitation, healthcare and welfare for both military and individual.

#### **6A01: The Effectiveness of a Pain Reprocessing Therapy Group for Chronic Pain and other Chronic Symptoms in an Operational Stress Injury Context**

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<sup>1</sup>Calgary Operational Stress Injury Clinic

**Program/Intervention Description:** Chronic pain and other chronic symptoms are highly prevalent in military and police populations and frequently comorbid with other Operational Stress Injuries (OSIs), such that finding effective treatments for them is a high priority. As pain or physical symptoms become chronic, fear and avoidance of pain frequently develop, which reinforces that the pain is dangerous. Pain Reprocessing Therapy (PRT) aims to improve functioning and reduce pain/chronic symptoms by integrating several psychological treatment strategies, including cognitive reappraisal of pain beliefs, mindful interoceptive exposure with chronic symptoms, and increased attunement to positive sensations. A recent RCT val-

idated the effectiveness of PRT in treating chronic back pain; approximately 98% of participants receiving PRT experienced an improvement in symptoms related to chronic pain and 66% of participants reported being pain-free or nearly pain-free.

The present study evaluates an 8-session, weekly PRT treatment group at the Calgary OSI Clinic (data is amalgamated over multiple groups) that includes: psychoeducation about chronic pain/symptoms, review of personal symptoms, interoceptive exposure, psychoeducation, practice of emotional processing and cognitive reappraisal skills, goal-setting and pacing for movement, values assessment, and strategies for maintenance and relapse prevention. It integrates treatment strategies from Cognitive Behavioral Therapy, Acceptance and Commitment Therapy, Interoceptive Exposure, and Intensive Short-Term Dynamic Therapy.

**Evaluation Methods:** Calgary OSI Clinic clients who have had chronic pain/symptoms for at least 6 months and are referred by their primary clinicians are screened for fitness for group. This ongoing research study is assessing self-reported symptoms of pain, pain-related disability, pain-related anxiety, mood, generalized anxiety, trauma, and insomnia symptoms by having group members complete the BPI-DF, TSK-11, PCS, PHQ-9, GAD-7, PCL-5, and ISI at 3 time points. An ANOVA will be conducted to determine the significance of changes from pre-, post- and 3-month follow-up on each of the measures.

**Results:** This pilot study began data collection in March 2023. Depending on whether statistical power has been met at the time of the presentation, data will be presented either from ANOVA analysis or in the form of preliminary crude rates for selected measures during this presentation. At the time of the abstract submission, 10 clients completed, and all scores have decreased from pre to 1 month follow up.

**Conclusions:** This research has the potential to support the validity of group PRT treatment as effective with military, police, and veteran populations and to contribute to the existing research on the effectiveness of PRT for treating chronic pain/symptoms.

#### **6A04: An Examination of the Relationship Between Persistent Traumatic Brain Injuries and Chronic Pain Conditions in Active-Duty and Veteran Soldiers**

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<sup>1</sup>University of Manitoba

**Introduction:** Traumatic brain injuries (TBI) are highly prevalent among military personnel and can have lasting negative physical, psychological, and psychosocial consequences. Chronic pain is one common comorbidity for those experiencing persistent effects of a TBI. Past studies, among U.S. military samples, have demonstrated an association between

chronic pain and TBI, but questions remain regarding the type of chronic pain and related biopsychosocial factors. This study examined the relationship between TBI and chronic pain conditions, with attention to pre-injury characteristics (i.e., sociodemographic and military demographics), mental disorders, and biopsychosocial factors (i.e., coping, sleep difficulty) and the influence they may have on this relationship using a Canadian military sample.

**Methods:** This study utilizes data from the 2018 Canadian Armed Forces and Veterans Mental Health Survey (CAFVMHS), a 16-year follow-up of 2941 CAF Regular Force personnel originally sampled as part of the 2002 Canadian Community Health Survey – Canadian Forces Supplement (CCHS-CFS) (n = 2, 941). In 2018, 66% of the 2002 sample transitioned from active service to veteran status. The main outcome was chronic pain conditions (i.e., arthritis, back problems, gastrointestinal conditions, and migraines). Independent variables included persistent TBI, sociodemographic and military demographics, DSM-5 mental health disorders, and biopsychosocial factors (i.e., coping, social support, moral injury, and sleep difficulty).

**Results:** Chronic pain conditions were more likely among those with persistent TBI compared to those without (*any chronic pain condition* OR = 4.06). Individuals with lower ranking, veteran members, and those with lower use of problem-focused coping and higher sleep difficulties were more likely to have chronic pain among those with persistent TBI. Interaction effects were present for problem-solving coping on persistent TBI and any chronic pain condition(s).

**Conclusions:** Findings draw attention to a heightened prevalence of all chronic pain conditions among those with persistent TBI compared to those without persistent TBI. These results support early recognition and treatment of persistent TBI; using interventions that focus on teaching problem-focused coping skills and providing sleep hygiene education in order to help mitigate lasting and comorbid consequences.

### **Poster Presentations**

#### **P144: Trends of Cannabis for Medical Purposes Authorizations 2016-2023**

Cull, Alex, MSc (cand)<sup>1,2</sup>; Acorn, Chandler, BSc<sup>1</sup>; Gallant, Shawn, BSc<sup>1,3</sup>; Poirier, Alain<sup>1</sup>; Reyes-Vélez, Julián, PhD<sup>1</sup>

<sup>1</sup>Veterans Affairs Canada; <sup>2</sup>Université de Moncton; <sup>3</sup>University of Prince Edward Island

**Introduction:** Due to the nature of their service, Canadian Veterans face an increased risk of certain medical conditions. In 2016, Veterans Affairs Canada (VAC) introduced a policy for reimbursing the cost of Cannabis for Medical Purposes (CMP). The number of Veterans receiving VAC reimbursement for CMP has risen significantly. Expanded access to CMP and an evolving Canadian Veteran population have led us to study the

evolution of prevalent medical conditions among VAC clients in contrast with the conditions for which they are authorized to use CMP.

**Methods:** This research analyzed data from 24,987 clients totaling 150,663 authorizations for CMP. Medical authorizations may list multiple medical condition. We employed time series analysis to explore historical data and forecast future trends. To conduct the analysis, data was processed using an ARIMA and a Linear Regression model available from the *table* package for R. Models were developed for the most common medical conditions to help investigate authorization data. Theil-Sen slopes were generated for five common conditions to compare the increase of authorization counts over time.

**Results:** Models were generated for the conditions most frequently listed on authorization documents conditions (PTSD, chronic pain, and depressive disorder) and for five pensioned conditions. The ARIMA models for the top pensioned conditions show a steady increase in authorizations over the forecast period. Theil-Sen slopes for the top condition were: PTSD: 0.467, Chronic Pain: 0.529, Depressive disorder: 0.153, Tinnitus: 0.189, Insomnia: 0.066

**Conclusions:** Beginning in 2016, most authorizations for CMP included a diagnosis of PTSD and chronic pain. We propose that disability entitlements for PTSD and chronic pain are the main gateways for CMP reimbursement from VAC. Results from our models indicate a difference in degree but not in kind with regard to the effect of a few common conditions on the growth of the VAC CMP reimbursement program.

### **P145: Development Process for the Veterans Dashboard at Veterans Affairs Canada**

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<sup>1</sup>Veterans Affairs Canada; <sup>2</sup>Statistics Canada

**Introduction:** Veterans Affairs Canada recently undertook work to develop a departmental wide statistical dashboard that could be utilized for its planning and reporting. The Veterans Dashboard is an R Shiny dashboard that was built using data from the 2021 Census of Population and 2019 Life After Service Survey (LASS) and serves as an interactive tool that can be used to explore various sociodemographic characteristics and well-being indicators for the Veteran population.

**Methods:** The dashboard was developed using R Shiny and several other packages, including *cansim*, *readxl*, *haven*, *srvyr*, *dplyr*, *tidyr*, *janitor*, *shinydashboardPlus*, *shiny.i18n*, *ggplot2*, *plotly*, *gt*, *leaflet*, and *sf*. The dashboard was built using data points from various sources, such as the Census and LASS. The data was delivered in varying formats, including Beyond 20/20, Excel, and Stata, and required cleaning and reformatting before being loaded into R. The census data was pre-ag-

gregated in the source files. Working with the clean data, VAC reviewed the different information available from the data sources and determined which cross tabulations should be included in the dashboard. A prototype was built and hosted on the internal network within VAC and was shared with a select group of teams for User Acceptance Testing integrated with open feedback on the content and functions from other teams. A data validation process was performed internally by different researchers.

**Results:** Overall, the dashboard was built using a combination of 22 data tables, 20 of which came from the Census data and 2 from LASS. The data was used to generate content amongst 8 topical tabs in the Dashboard. The Census data was used to provide an overview of the sociodemographic characteristics of Veterans, on tabs such as Quick Facts, Demographics, Interactive Map, Diversity, Education and Employment tabs. The LASS data had its own dedicated tab presenting well-being indicators. The data was displayed in varying formats, such as value boxes, plots, tables, and maps. Filters were built into the overall application to filter the data by gender, age, and geography.

**Conclusions:** The Veterans Dashboard has been successfully deployed within the department and is being used as a source of statistics about the population. The dashboard also served as a proof of concept for the use of R for reporting and data workflows within the Research Directorate.

### **P151: Exploring Trends in Brain Fog and Quality of Life Outcomes in Veterans with Chronic Pain: A cross sectional study**

**Dass, Ronessa, MSc<sup>1</sup>; Velikonja, Diana, PhD<sup>1</sup>; Harris, Jocelyn, PhD<sup>1</sup>; Packham, Tara, PhD<sup>1</sup>**

<sup>1</sup>McMaster University

**Introduction:** Promoting meaningful engagement in Veterans with chronic pain is challenging, due to the comorbid experiences that accompany a chronic pain diagnosis, impacting quality of life. Brain fog is a symptom of chronic pain that decreases quality of life of Veterans by reducing engagement in activities and cognitive capacity. The relationship between the impacts of brain fog and quality-of-life outcomes have not been quantified in the Veteran population. Exploring trends between brain fog features and Veteran quality of life is important to inform appropriate assessment of brain fog for research and clinical practice. The primary objective was to compare the impacts of pain interference on three structured questionnaires relating to quality-of-life in Veterans with brain fog: the Patient-Reported Outcomes Information System Version-29 (PROMIS-29; health-related quality of life), the Pain Self Efficacy Questionnaire (PSEQ; perceived abilities), and the Multiple Abilities Self-Report Questionnaire (MASQ; functional cognition). The secondary objective was to compare the relationships between questionnaire scores.



**Methods:** A cross-sectional study was performed using a one-way MANOVA, examining differences between low and high pain interference on mean scores on the PROMIS-29, PSEQ, and MASQ. Post hoc testing included a manual Bonferroni correction. Pearson's correlation analyses were conducted to explore the relationship between scores in outcomes measures.

**Results:** A total of 34 (15 low pain interference, 19 high pain interference) Veterans participated in this study. Participants were all cisgender, mostly male (F = 9, M = 26), and in the age group of 50-65. Differences in mean questionnaire scores based on pain interference groups were found, with persons with high pain interference demonstrating more mental health symptoms, and less physical functioning and perceived abilities. Correlation analyses showed 1) strong relationships between PROMIS mental health symptoms and PROMIS physical health sub-scales; the PSEQ and PROMIS physical health sub-scales, and 2) moderate correlations between the PROMIS physical health and PROMIS sleep disturbance sub-scales; the PSEQ and MASQ, and the PSEQ and PROMIS mental health symptoms sub-scale.

**Conclusions:** In Veterans with brain fog, those with high pain interference reported more mental health symptoms and less physical functioning and perceived abilities. The correlation analyses demonstrate relationships between 1) increased mental health symptoms and less physical functioning, 2) less physical functioning and greater sleep disturbances, 3) less perceived ability and greater challenges with functional cognition, 4) increased mental health symptoms and less perceived ability. This study contributes to the understanding of Veterans' experiences with brain fog and provides evidence-based suggestions for future exploration.

### **P152: Exploring the Role of Service Dogs for Canadian Military Veterans Experiencing Suicidality**

*Pavelich, Alexandria, MA<sup>1</sup>; Dell, Colleen, PhD<sup>1</sup>; de Groot, Paul, BA<sup>1</sup>*

<sup>1</sup>University of Saskatchewan

**Introduction:** It is well-recognized that Veterans are a population at increased risk for suicide. Despite ample anecdotal evidence, there are limited meaningful, qualitative studies on the important role of the human-animal bond (HAB) in reducing suicidality. However, research has increasingly shown the viability of service dogs (SDs) as a complementary approach for military Veterans living with post-traumatic stress disorder (PTSD) and substance use harms - two of the strongest indicators for potential suicidality.

**Methods:** An original, exploratory study for which data was initially collected, focused on how SDs supported Canadian Veterans living with PTSD and substance use concerns while working alongside a national service dog organization. From this dataset, a secondary analysis was undertaken to explore the experiences of four Veterans identified as being at high

risk for suicide, with recruitment occurring through purposeful sampling by the service dog organization. Grounded in a social support theoretical framework and community-based approach, 28 in-depth interview transcripts conducted at regular intervals over a 16-month period were secondarily examined by employing an affective coding method. The goal was to understand how SDs may reduce experiences of psychophysiological distress for Veterans.

**Results:** The findings of the analysis revealed that the interactions and bond that occurred between the Veteran and their SD had an impact on reducing many indicators that can increase suicidality, and foremost social isolation, hopelessness, and on-going symptoms related to depression, PTSD, and substance use concerns. Further, the SDs were reported by the Veterans as the catalyst in reducing self-harm and suicidality because the HAB provided a unique and necessary form of social support that was distinct for Veterans compared to what their human interactions could provide. The SD was explained as the bridge that improved the Veterans' overall quality of life, reduced markers commonly recognized as precursors to suicide, and acted as an anchor to provide hope and improved optimism.

**Conclusions:** Our exploratory and innovative research examined the significance that SDs can have for Veterans experiencing suicidality by revealing findings that may be critical in helping reduce future suicide risk among military Veterans. Further, in-depth qualitative investigation of suicidality is directly needed for this population, and the voices and perspectives of Veterans must be prioritized. This includes understanding the role that SDs have in reducing distressing psychophysiological experiences and promoting improved well-being, as well as what the SDs appear to offer that humans can potentially improve upon.

### **P153: Quantifying Differences in Clinical Records of Pain with a Natural Language Processing Approach in Treatment Seeking Veterans**

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**Introduction:** The intersection of chronic pain and mental health is complicated by the unique experiences and expressions of pain and mental health issues among Veterans, which may diverge significantly from civilian populations. Further intersecting this nexus is the influence of gender on the articulation and expression of chronic pain and mental health symptoms. In clinical settings, understanding these gender-based differences is paramount, as it may significantly influence the assessment, diagnosis, and treatment planning for Veterans.

This study investigates the complex interplay of chronic pain and mental health issues such as PTSD, anxiety, and depression among Canadian Veterans from a gender perspective, with a focus on identifying gender-based linguistic patterns in clinical narratives of chronic pain and its comorbidities

**Methods:** Utilizing Natural Language Processing (NLP), we analyze clinical notes from the Operational Stress Injury (OSI) clinic in London, Ontario. We employed a bag of words NLP technique to analyze 3,669 clinical notes, aiming to quantitatively compare the language used to describe male and female Veterans' experiences of chronic pain. This approach allowed us to systematically identify and compare terms associated with chronic pain, its symptoms, and related psychological comorbidities across genders, revealing potential biases in clinical documentation.

**Results:** The analysis revealed significant differences in the language used in clinical notes between genders. Female Veterans' notes contained nearly twice the mentions of pain compared to their male counterparts, indicating potential disparities in how pain is acknowledged and managed across genders. Furthermore, the language surrounding chronic pain and related comorbidities varied markedly, suggesting that clinical documentation may be disconnected from the final approaches of pain perception and later treatment.

**Conclusions:** Our findings advocate for the integration of gender-sensitive practices in both clinical settings and NLP research to ensure equitable care for Veterans suffering from chronic pain. By uncovering linguistic disparities, this study prompts a re-evaluation of current approaches to chronic pain management, advocating for more personalized, gender-aware treatment strategies. It also underscores the need for future research to incorporate Veteran narratives directly, enhancing the depth of understanding and treatment of chronic pain. The stark difference in language suggests that there is a disconnect from impressions and reports of pain to treatment. This research contributes to filling a significant gap in the literature, paving the way for improved clinical practices and policy development aimed at providing targeted, high-quality care for Veterans with chronic pain and its comorbidities.

### **P155: Aligning the Stars: Using Research Paradigms to Guide Mixed-Methods Approaches for Veterans' Health and Well-Being**

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<sup>1</sup>Veterans Affairs Canada

**Introduction:** The VAC Veterans' Well-Being Community Health Needs Assessment (CHNA) framework was used to

collect, analyze, synthesize, and report data on Canadian Veterans' health and well-being. To achieve this, mixed-methods, guided by eight distinct, yet symbiotic, research paradigms resulted in an innovative research design. These paradigms included intersectionality and SGBA+, life course, participatory, decolonial and Indigenous-based, anti-oppressive, trauma-informed, and health-equity. This novel approach aligned with the CHNA's objectives, enabled the research to remain grounded in Veterans' lived-experiences, and produced nuanced findings.

**Methods:** The CHNA's overarching research question was *"What are the health and well-being strengths and needs of Canadian Veterans?"* The mixed-methods design integrated generalizable, population-level quantitative data, and produced contextualized insights from qualitative data. Methods included Veteran community engagement, literature scan, secondary-data analysis, interviews and focus-groups, and critical reflexivity. This approach was grounded in the following research paradigms—Intersectionality & SGBA+: investigated Veterans' intersecting social identities and lived-experiences (e.g., gender, sexual orientation, military service, etc.); Life Course: considered how life course shapes Veterans' current and future health and well-being; Participatory: engaged Veterans and stakeholders to inform research design, knowledge translation, and validation of findings; Decolonial & Indigenous-based: challenged colonial research methods by centering lived-experiences, and exploring non-traditional knowledge; Anti-Oppressive: engaged equity-deserving Veterans to include underrepresented perspectives and avoid 'othering'; Trauma-Informed: ensured researchers' military-cultural competency, providing safe and supportive environments for Veterans; Health Equity: explored root causes of Veteran inequities at individual, interpersonal, community, organizational, structural, and historical levels.

**Results:** Application of this research design demonstrated its strength in centering Veterans' contextual lived-experiences of health and well-being, and utility for informing future research. Findings generated recommendations for researchers. Veterans' identities are intersectional and fluid. Consider how Veterans' experiences evolve across their life course, and the impact they have on social identities, coping strategies, and beliefs. Veterans may respond differently to stress and trauma. Internalized powerlessness, discrimination, and structural barriers can shape how and to whom Veterans communicate challenges. Consider impact of methods on Veterans' participation. Provide environments that are flexible, trauma-informed, safe, and inclusive. Reflect on how portrayals of individuals might reinforce stereotypes, essentialization, 'othering', or marginalization. Ensure portrayal also emphasizes Veterans' strengths and assets.

**Conclusions:** Evidence used to inform programs, policies, and guide future research, for Veterans' health and well-being,

often relies on traditional methods and population-level data. The CHNA used an innovative research design that married research paradigms with mixed-methods that successfully centered Veterans' contextual lived-experiences, and can inform future research design.

**P158: Research Collaboration through a Life Course Lens: Introduction to a new interdepartmental research collaborative to enhance research in support of Canadian Armed Forces members and Veterans**

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<sup>1</sup>Department of National Defence; <sup>2</sup>Veterans Affairs Canada; <sup>3</sup>Statistics Canada

**Brief Description:** The Department of National Defence (DND) and Veterans Affairs Canada (VAC) share an interest in supporting the health and well-being of military personnel and Veterans, representing different life course phases in those with service in the Canadian Armed Forces (CAF). While each department has its own mandate, research functions across DND and VAC are expected to work collaboratively on topics and priorities of mutual interest. To support and enhance collaboration, an interdepartmental working group of researchers was established in 2023. Its purpose is to maintain awareness of research priorities, projects, data, and relevant contacts, and identify joint priorities/challenges and opportunities to collaborate on research.

The Veterans Affairs Canada (VAC) / Department of National Defence (DND) Personnel and Veteran Health and Well-being Research Collaborative (hereafter referred to as "The Collaborative") was established in early 2023. As an initial step to establishing The Collaborative, the Secretariat identified key research program areas within each department. Group heads for each program area, along with key representatives who are responsible for overseeing and conducting population research focused on military/Veteran health and wellness, are invited to quarterly meetings in which they provide updates on current research and priorities, upcoming meetings/briefings/conferences, and other timely topics. Following ratification of a Terms of Reference, The Collective undertook a summary of joint/non-joint research initiatives completed or underway in the past 12 months, as well as planned research for each department.

**Patient Population:** Serving CAF members and Veterans, and their families.

**Results:** Research initiatives summarized by The Collective included: Health (mental and physical), Health surveillance, Women's Health, Indigenous, Economic well-being, Access to services, Medical intervention, Substance use, Homelessness, Occupational exposures/health, Data Development, Recruit-

ment/retention, Military families, Harassment and discrimination, Diversity and inclusion, Transition, Morale and well-being, and Military technologies to support health. The majority of research projects being conducted within these themes are currently active. Points of contact for each initiative were summarized to facilitate communication and information finding for The Collective's membership.

**Conclusions:** The Collaborative aims to facilitate research communication, awareness, and priority setting across VAC and DND. This is an important means to maximize research impact to support the health and well-being of military personnel and Veterans over the life course. Along with an annual summary of joint/non-joint research initiatives, anticipated outputs include a summary of proposals for research to be undertaken through the joint VAC-CAF research funding process and a summary of relevant data sources currently available for additional research.

**P159: Preliminary Results from a Pilot Study of a Patient-Informed Revision of an Online Pain Treatment for Military, Royal Canadian Mounted Police, and Veterans**

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**Introduction:** Chronic pain affects military and veterans at higher rates than the general population. Psychotherapeutic treatments are an increasingly used, evidence-based treatment for chronic pain. Acceptance-based Behavioural Therapy (ABBT) is one such psychotherapeutic treatment that has benefitted military and Veterans with chronic pain, however a study on participant feedback provided information that was used to better tailor the treatment to this population. The current study tested this revised version of an online acceptance-based behavioural therapy for chronic pain.

**Methods:** The initial sample ( $n = 8$ ) was composed of Veteran members of the Canadian Armed Forces or RCMP who reported persistent pain lasting 6 months or longer (19.25 months on average) and who were on the waitlist to receive psychotherapeutic treatment for chronic pain at the Winnipeg Operational Stress Injury (OSI) clinic. The final sample was 50% female, and 62.5% of participants were in the age range from 50-59 years old. The treatment was six weeks long and participants spent approximately 60 minutes per week completing the online treatment, which involved reading psychoeducational materials and completing written activities, as well as receiving feedback from a clinician. Participants completed five questionnaires about their perception of pain level and pain-related concerns before and after completing the treatment. Paired samples  $t$ -tests were conducted to analyze changes from pre- to post-treatment.

**Results:** The preliminary results revealed moderate reductions in pain symptoms, pain-related disability, and fear of movement and small reductions in pain-related catastrophic thinking, as well as moderate increases in participants' level of pain acceptance. Of note, none of the results were statistically significant, likely given the small sample size. The preliminary results suggest the potential of this intervention to reduce pain-related symptoms and increase quality of life for individuals in military and police organizations and Veterans of those organizations.

**Conclusions:** This treatment has the potential to improve social functioning along with physical and psychological health in those suffering from chronic pain in military, Veteran, and RCMP populations. The main limitation of this study is the small sample size, which could be addressed in future studies. Given that RCMP and military members are often posted in rural and remote locations, online treatments are an important option for increasing accessibility of mental health services. Ensuring that such treatments are both effective and appropriate is an important step towards decreasing barriers for those in need of these services.

### **P168: An Age-period-Cohort Analysis Health Outcomes for Era-specific Canadian Veterans**

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**Introduction:** Age-period-cohort analyses are used to understand time-varying elements, particularly the effects of age (e.g., biological and social processes), a period (social, environmental, and cultural factors that equally impact a group defined by a distinct era of calendar time), and a cohort (a structural factor representing the sum of all unique exposures). Among the Canadian Armed Forces (CAF) and Royal Canadian Mounted Police (RCMP), the objectives of this study were to understand the time-varying elements of age, era of service (period), and length of service (cohort) and the epidemiology of diabetes and mental health-related health services use.

**Methods:** This is a retrospective cohort study using provincial routinely collected health data in Ontario, Canada housed at ICES (formerly the Institute for Clinical Evaluative Sciences). CAF and RCMP veterans living in Ontario between 1998-2019 with provincial health insurance coverage within one month of release from their military or RCMP career were included in the study and followed until 12/31/2023. Age at release and length of service were categorized in 5-year intervals. The era of RCMP and military service was categorized using career start and stop dates. Diabetes diagnoses were estimated using a validated algorithm of hospitalization and physician visit data. Mental-health-related health services use was estimated using

an established ICES algorithm for physician visits, emergency department visits, and hospitalizations. We will describe age-adjusted and sex-adjusted diabetes prevalence and health service use visit rates and conduct age-period-cohort modeling to estimate the independent effects of age at release, era of service, and length of service.

**Results:** Overall, N = 21,223 veterans were included in the final sample. Most of the sample were male (84.5%) and over a third were aged between 40-49 years at the end of their military service (36.5%). Lengths of service varied from <5 years served (10.7%), 5-9 years (10.6%), 10-19 years (16.4%), 20-29 years (37.6%), and 30+ years served (24.7%). Year of service end was also collected: 2000-2005 (23.9%); 2006-2010 (22.2%); 2011-2015 (23.1%); 2016-2020 (23.9%). Further data analysis is underway.

**Conclusions:** The study findings will provide evidence as to whether an age-period-cohort analysis may help understand the epidemiology of physical and mental health among veterans. The project adopts a novel statistical analysis approach, and the methodological practices may be used as a framework for future research. If successful, these methods could contribute to future research studying trends in veteran health, and identifying veterans at an increased risk of different health outcomes.

### **P170: Is Equality Equitable? - Research Protocol**

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<sup>1</sup>University of Glasgow (Scotland)

**Introduction:** Military veterans form a defined but diverse cohort of individuals whose varied experiences during service may have impacted on their health. However there may be changes over time, and there may be differences between subgroups of the veteran population. It is important to identify factors impacting on health outcomes in veterans in comparison to the general population to optimise healthcare and support to veterans, to identify at-risk subgroups, and to inform in-service military health protection policy.

The aim of this study is to assess these health outcomes in one subgroup, female veterans, in comparison to their male counterparts and to the female non-veteran population. Of specific interest are the periods pre- and post- 1991 when policy changes allowed women to remain in the British military following pregnancy and, from 2018, when they could be employed in all combat roles.

**Methods:** Retrospective cohort study of Scottish military veterans. Pseudo-anonymised electronic health data from 1981-2022 will be analysed to explore health outcomes in an estimated 10,000 female and 90,000 male veterans born between 1945 and 2005, compared with a 3:1 matched general population comparison group.



**Results:** It is expected that there will be substantial differences between male and female veterans, and between female veterans and women in the general population, particularly comparing outcomes before and after the 1991 time point relating to pregnancy policy. The results may show novel findings which are of potential utility at a strategic level to inform the Ministry of Defence and NHS Scotland. This may result in changes of processes and, in particular, information given to female recruits to allow them to make informed choices when enlisting. This is anticipated to inform support mechanisms and improve long-term health outcomes of this group of service personnel.

**Conclusions:** By focusing on the health outcomes of female military veterans, this research will offer strategic insights into health outcomes of this group that can inform policy, and whether equality of employment is truly equitable in terms of long term health. It aims to identify areas of need within this group and to explore where services can be directed to support the unique circumstances of women veterans.

### **P171: “We’ve answered your questions and now it’s time for action”: An evidence review to support Canadian Veteran community engagement and knowledge mobilization**

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<sup>1</sup>Veterans Affairs Canada

**Introduction:** Health and well-being research and advocacy efforts for Canadian Veterans and their families are growing, and with them, an understanding of the need for increased collaboration. Despite this progress, there remains challenges in knowledge mobilization and coordination amongst stakeholders within the Veteran resource landscape.

Veterans receive care from provincial/territorial health systems and have access to additional supports from various community and government-based stakeholders. However, the limited capacity for collaboration amongst these stakeholders leaves the Veteran resource landscape fragmented and difficult to navigate, particularly during life after service. Further impeding Veterans’ willingness to access and interact with these stakeholders, are experiences of discrimination, dismissal, institutional betrayal, trauma, and/or re-traumatization when seeking care and support. The recent VAC Veterans’ Well-being Community Health Needs Assessment found that Veterans, particularly those who are equity-deserving, often lack trust and confidence in health systems, VAC, and other governmental organizations.

Addressing fragmentation in the Veteran resource landscape, fostering collaboration within the Veteran community, and building trust with Veterans, provides an opportunity towards systemic change in knowledge mobilization and organi-

zational engagement with Veterans. The evidence review investigates the nature and dynamics of existing relationships between Veteran community stakeholders, and particularly, the lack of inclusion *or ability to reach* equity-deserving Veterans in many of these relationships. The aim is to identify strengths, challenges, and recommendations for key Veteran community stakeholders.

**Methods:** Supported by a targeted literature search and consultation series, the evidence review will consolidate and provide relevant insight from the recent Veterans’ Well-Being Community Health Needs Assessment, the 2024 VAC Stakeholder Summit, the 2024 Women Veterans’ Forum, and insights from the VAC Ministerial Advisory Groups. “Key” stakeholders will be defined for comprehensive discussion based on these findings, as well as input from Veterans, advocacy groups, service providers, policy-makers, and researchers. Deliberate efforts will be made to include stakeholders whose work exclusively focuses on equity-deserving Veterans.

**Results:** The intended outcome is clear documentation of the roles and relationships of identified key stakeholders who are taking action to improve Canadian Veteran health and well-being. Unique historical context and strengths/challenges in community engagement and knowledge mobilization will be identified. Specific recommendations to improve engagement and sharing of knowledge amongst Veteran community stakeholders in research, policy, and advocacy will be presented.

**Conclusions:** The evidence review will provide findings and recommendations that can be used as a roadmap to build community capacity for meaningful engagement, awareness of resources for Veterans, and prompt mobilization of emerging findings.

### **P176: A Primer on Medical Cannabis for Medical Purposes and the Treatment Choices: Canadian Veteran Health Survey 2022**

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<sup>1</sup>Veterans Affairs Canada; <sup>2</sup>University of Prince Edward Island; <sup>3</sup>Université de Moncton

**Introduction:** The evidence supporting Cannabis for medical purposes (CMP) use in the Veteran population remains uncertain concerning its benefits and harms and its effect on medical conditions that are prevalent among Veterans. The Canadian Veteran Health Survey (CVHS) provides insights into the health and well-being of Canadian Veterans on a broader scale and provides insights on specific topics, specifically CMP use. Veteran Affairs Canada (VAC) researchers analyzed CMP use and the combination of specific medical conditions and treatment choices associated with its use in the Veteran population.

**Methods:** VAC researchers conducted analysis on CMP relevant variables included in CVHS 2022 data, stratifying them using demographic information, and producing descriptive population estimates (including 95% confidence intervals) while accounting for complex sampling. VAC researchers performed a multiple response analysis to assess the medical purpose along with methods of consumption and the forms of cannabis product that the Veteran had consumed.

**Results:** In the year prior to the survey, 16.5% (14.6%, 18.6%) of Veterans consumed Cannabis for medical purposes. Veterans used CMP most often for the following conditions: pain - 81.2% (75.6%, 85.8%), anxiety - 38.4% (32.2%, 45.0%), PTSD (Post Traumatic Stress Disorder) - 30.4% (24.7%, 36.8%), and sleep issues - 60.8% (54.1%, 67.1%). Veterans most often used CMP to treat the following symptoms: nausea - 4.5% (2.7%, 7.5%), lack of appetite - 6.5% (4.1%, 10.2%), headache - 12.8% (9.2%, 17.6%), and muscle spasms - 13.2% (9.4%, 18.1%). The most common methods of CMP consumption were liquid - 74.7% (61.9%, 84.3%), smoked - 60.5% (55.1%, 65.6%), and dried flower leaf - 41.0% (29.5%, 53.6%).

**Conclusions:** Veterans used CMP most often for pain and mental health conditions. Interesting information concerning medical conditions and treatment choices emerged from the analysis of CPM use in this population. This information will help stakeholders and service providers better understand the prevalent conditions associated with CMP use, the main methods of consumption, and the various forms of Cannabis consumed for medical purposes in the Veteran population. This information can inform better control of the potential risks of CMP use in the Veteran population.

### **P177: Health and Well-Being of Women Veterans and Other Vulnerable Groups**

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<sup>1</sup>Veterans Affairs Canada

**Introduction:** Veterans Affairs Canada (VAC) has been reporting on Veteran well-being using an accepted set of 21 high-level indicators. CVHS 2022 data analysis is underway, and VAC has some preliminary findings to share. VAC has identified areas where Veterans are facing challenges and where gaps exist. The findings will allow priorities to be established for all Veterans including women and other vulnerable subsets and support evidence-based decision making.

**Methods:** The data used in this analysis is from the first cycle of CVHS in 2022. This survey replaced the Life After Service Survey (LASS) and was the first national survey to represent all Canadian Veterans. A simple random sample was selected independently within the following four strata: indigenous identity, visible minority, female, and male. Use of strata ensured representation of these groups, allowing for more detailed reporting to produce estimates for each respective sub-population.

There were 3,215 Veteran respondents and 2,714 (84%) of them agreed to share their data with VAC. Results will include analysis by gender with specific emphasis on women Veterans and other vulnerable groups. Due to concerns with confidentiality, gender will be rolled up into two categories for reporting:

- Men+ includes men (transgender men and cisgender men) and some non-binary people; and
- Women+ includes women (transgender women and cisgender women) and some non-binary people.

**Results:** The data provides insight into the sociodemographic characteristics and the health and well-being of all Canadian Veterans with special analysis on subsets of the Veteran population such as women and other vulnerable groups. The outcome will be a report on the findings with respect to the well-being of Veterans with comparisons to the Canadian population, where possible. Preliminary findings indicate that women+ Veterans were more likely than men+ to have served only in the Reserve Forces (48.4% vs 33.9%), less likely to report high blood pressure (25.9% vs 36.0%), more likely to report anxiety (24.1% vs 17.4%) and mood disorders (23.7% vs 16.8%), more likely to rate their mental health as worse now than before the COVID 19 pandemic (29.5% vs 22.9%), and more likely to report life as “quite a bit” or “extremely” stressful (27.6% vs 20.6%).

**Conclusions:** Veteran health and well-being will be measured and trends in well-being identified leading to evidence-based decision making, sound policy development, improved effectiveness of VAC programs, and ultimately the improved well-being of Veterans and their families.

### **P179: Involuntary Release in Canadian Veterans from the Regular and the Reserve Forces: Life After Services Studies 2013**

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**Introduction:** The retention and attrition of military personnel has implications on preserving military morale, productivity, operational readiness, and national security. The shortage of military personnel has been an international challenge for military organizations worldwide including the Canadian Armed Forces (CAF). Successful retention of military personnel is a complex process and warrants an understanding of factors influencing military personnel's retention. Retrospective examination of military service on Veteran data (LASS 2013) could help to understand the current situation. The aim of this study was to explore military personnel's (Regular and Reserve Force) hazards ratio (HR) of involuntary release adjusted by rel-

evant variables covering occupation, demographics and post release health characteristics.

**Methods:** Retrospective design was employed using descriptive weighted statistics that assessed the distribution of the variables in the complex sample of 3,727 individuals (Reserve: 1,398 and Regular Force: 2,329). The outcome variable was involuntary release, which was composed by specific DND administrative definitions. Hazards ratio (HR) of involuntary release was adjusted by variables covering occupation, demographics and post release health characteristics. Cox proportional hazard regressions were also calculated to explore the differences between Regular and Reserve Force involuntary release.

**Results:** The model indicated that involuntary release of the regular force was 50% (100-50) lower than the reserve force. The rate of involuntary released was higher for Junior NCMs compared to Officers. Of note, as the number of physical conditions increased by one unit, the hazard ratio of involuntary release decreased. Furthermore, with the number of mental health conditions increasing by one, the HR of involuntary release increased as well. Both land and sea service environments also had higher HR for involuntary release when compared with air. The hazard of involuntary release increased with a peak at the sixth year of service and then decreased in the tenth year, with some oscillations until the 18 year of service, where the hazard increased again. Across the length of service in years, the HR of involuntary release for the Reserve force was always higher than the Regular force.

**Conclusions:** The findings from this study have the potential to inform aspects of CAF-related retention strategies in order to support a healthy work environment for military personnel. The retrospective use of analysis of LASS could help inform stake holders for the current situation and address the differences between the Reserves and the Regular Force.

### **P180: Multiple Chronic Comorbidities Burden in Canadian Veterans: Life After Services Studies 2019**

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**Introduction:** The findings from the Life After Service Survey (LASS) (2019) yielded higher prevalence and incidence of multiple chronic comorbidities (MCCs) amongst Canadian Veterans in comparison to the general public. Although the prevalence of Diabetes Mellitus (DM) among CAF Veterans was comparable to the Canadian population (LASS, 2019), empirical evidence has demonstrated a direct correlation with DM and MCCs, and poor health outcomes. The purpose of this study was to: 1) assess Veterans' risk for onset of MCCs and DM after military release; and 2) determine the association

between MCCs and PHC with demographic, occupational, and well-being indicators.

**Methods:** Advanced inferential statistical analysis was used. More specifically, a cox proportional regression was used to assess the risk of DM before, during and after release, and a negative binomial regression was used to assess the number of Mental health conditions (MHC) (specifically anxiety disorder, depression, and PTSD) and number of Physical health conditions (PHC) (specifically cardiovascular, respiratory, gastrointestinal, obesity, musculoskeletal, diabetes, cancer, hearing, urinary, and central nervous system), and its association with demographics, occupational and well-being characteristics.

**Results:** Specific to Veteran's risk for onset of MCCs and DM after military release, the risk of DM was 0.37 and 0.27 times lower during and after release respectively, compared with the risk before release. However, the risk of DM among Veterans that were medically released was 1.4 times higher. Specific to the association between MHCs and PHC with demographic, occupational, and well-being indicators, there were statistically significant variations based on rank at release, service environment, type of release and length of service. Specific to PHC, there were higher associations among Senior NCM (IRR: 1.28), those employed in the sea environment (IRR: 1.20), that had length of service of 10-19 years (IRR: 1.35) and had medical release (IRR: 2.68). Similar findings were noted for MHC with higher associated among Senior NCM (IRR: 1.95), those employed in land environment (IRR: 1.56) serving for 10-19 years (IRR: 1.055) and had medical release (IRR: 5.79).

**Conclusions:** The findings show an increase in DM, MHC and PHC among Veterans after military release. Such findings may inform the development of health and behavioral related initiatives and interventions to better support Veterans living with MHC and PHC and in turn, potentially improve their quality of life and health outcomes.

### **P186: To Use or Not To Use: A Qualitative Exploration of Canadian Military, Veterans, and RCMP Cannabis Use Choices**

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**Introduction:** Cannabis is used increasingly among Canadian military, veterans and RCMP who frequently report benefits of cannabis. Qualitative studies are important to gather more rich information from the perspectives of individuals in these populations. To date, the authors are aware on only one such study that used a Canadian sample, which focused on veterans who experience chronic pain and use cannabis. This study provided rich information and highlighted these veterans' perspectives but concluded that further exploration was needed, particularly with more diverse groups. The current study

includes active military, RCMP, and veteran members of these forces who were seeking treatment for PTSD, depression or chronic pain, with some who chose to use cannabis and some who chose not to, as well as some who decreased or ceased prior cannabis use. The goal of this study was to increase knowledge around the reasons that these individuals have for their cannabis use choices.

**Methods:** This ongoing qualitative study currently has a sample that consists of 28 individuals who were active or veteran members of the Canadian Armed Forces or RCMP and who were seeking treatment for either PTSD, depression, or chronic pain. Recruitment is ongoing, and a final sample of 36-45 participants is anticipated for October 2024. Participants consented to participate in a larger study and answered two open-ended targeting reasons for cannabis use choices, and experiences of reducing or stopping cannabis use. Answers to these questions will be analyzed thematically with additional team members, but initial emerging themes have been generated by the PI.

**Results:** Several patterns are emerging from available data. Among individuals who do not use cannabis, personal beliefs and lifestyle choice were a frequently cited reason for this decision. For individuals who chose to reduce or cease cannabis use, a theme of attention to potential dependence or negative impacts of cannabis use is emerging, although respondents did not indicate significant problems when they chose to reduce or stop cannabis use. There was diversity regarding what influenced the choice to use cannabis, however hearing about the potential benefits as well as decreasing other substance use were two emerging themes identified.

**Conclusions:** Several novel insights from the sample are emerging that increase understanding of differing cannabis use choices. The influence of personal beliefs, other's experiences, and attention to potential negative impacts appear to be notable influences on cannabis use choices. Additional data and further analysis is expected to provide greater detail and clarity.

### **P188: Cross-Sectional National Survey on Cannabis Self-Education Needs of Canadian Veterans**

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**Introduction:** Chronic pain is more prevalent for Canadian Veterans compared to the general population. With medical cannabis as an emerging management option, cannabis self-education tools can be useful in guiding decision-making for Canadian Veterans. This project aims to identify existing self-education tools for cannabis in chronic pain used by Ca-

nadian Veterans and examine if, and how, such resources can meet their needs.

**Methods:** A cross-sectional, bilingual online survey was co-developed and validated with a panel of 18 people with lived experience. National stakeholder networks and service providers partnered to invite Veterans who have used, are using, or interested in using medical cannabis for chronic pain to participate. Intersectionality factors were reported as disaggregated data and where possible, a chi-square test was performed between subgroups. Qualitative responses were delineated using thematic analysis.

**Results:** Based on responses from 160 participants (64% male) across 10 provinces, 70% were between the ages of 50 to 69, 90% had experience being a regular force member, 78% were deployed during their service and 35% were college / university graduates. Most (134, 84%) currently use or have used cannabis for chronic pain, but only 86 (55%) have accessed self-education tools for learning. Thirteen categories of self-education tools were identified with websites (77%), brochures (32%), social media posts (21%) and videos (21%) being the most frequently used. Self-reported scores on usefulness showed the majority (73%) of participants rated cannabis self-education tools as useful, ranking them 6 or more out of 10. It's worth noting that, over half of those who used a self-education tool (64%) did not find them helpful for managing their challenges with cannabis. Veteran or CAF specific resources were found to be limited, and respondents questioned bias in the content due to most tools being hosted by industry partners.

**Conclusions:** Multiple self-education tools for cannabis use in chronic pain exist but tailored resources for Veteran are needed. A Veteran-informed guideline based on these findings are among the next steps in taking the Veteran voices heard into policy and practice.

### **P189: Developing a Veteran Informed Delphi guideline for Cannabis Self-education Tools**

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**Introduction:** Considering the dramatic medical cannabis increase in use among Canadian Armed Forces (CAF) Veterans and the potential for misuse, unsubstantiated product claims and bias from incentivized sources, there is a growing need to understand and equip Veterans who are taking medical cannabis for their chronic pain. Building on the results from a recently conducted national survey, the purpose of this study is to create a guideline based on Veteran consensus that could be utilized by stakeholders to make (or enhance currently existing) meaningful self-education tools for Veterans interested in, or currently taking, medical cannabis for their chronic pain.



**Methods:** A Delphi methodology was used to generate consensus among participating Veterans. Consensus members were required to be  $\geq 18$  years old; have previously served in the CAF; and currently use, previously used, or interested in using medical cannabis for managing their chronic pain. Two to four rounds of group consensus building were conducted by asking panel members to independently rank 24 prepared Delphi statements using a 7-point Likert scale. Delphi statements were generated based on a previously conducted national survey exploring Veteran and CAF member's needs for medical cannabis self-education tools and submissions made by panel members. A  $\geq 75\%$  consensus rate was used with statements ranked by panel members in terms of priority.

**Results:** Consensus among the 5 engaged panel members was achieved in 3 rounds. Panel members ranged from 20 and 59 years of age, 60% identified as male, had high school to post-graduate education, and had diverse CAF experience (e.g., regular and reserve). Based on consensus, the best time to deliver a self-education tool would be when a Veteran living with chronic pain is initially interested in using cannabis. Based on responses, key characteristics for self-education tools should be easy to read, up to date and easy to understand and, if sharing/hosting virtually, should be delivered on a website and in an email newsletter. In descending order of priority, these self-education tools should include how cannabis works, what cannabis dose to use, the possible negative consequences of medical cannabis and what to do if medical cannabis is no longer effective.

**Conclusions:** This guideline can be used to help address the voiced needs of Veterans who are navigating health information, specifically on medical cannabis, within a civilian setting. Dissemination to stakeholders, implementation of this guideline and gauging its potential success are among the future avenues to explore.

### **P191: Sex Differences in Outcomes of Early Release from the Canadian Armed Forces**

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**Introduction:** Limited research examined the impact of releasing early from service (i.e., characterized as equal to or less than 19 years of service) in the veteran population, and even less research has explored this relationship by sex. While protective and risk factors have been identified in initiating early release, the effects of early release on outcomes remains understudied. Given the increased prevalence of mental disorders and traumatic exposures in the early-release population, it is important to better understand potential differences compared to their counterparts who remained in service. Due to increasing female representation in the military, it

is important to characterize the sex-based differences in transitional outcomes.

**Methods:** This study will utilize data from the 2018 Canadian Forces Members and Veterans Mental Health Follow-up Survey to examine sex-differences in how early release affects future employment; physical and mental health; sense of belonging and community; and need for financial and healthcare resources. Prevalence and outcomes associated with early-release amongst veterans will be examined.

**Results:** As the study is in its early stages of data analyses, it is expected that early release veterans may have higher likelihoods of perceived need for healthcare and financial resources. This is anticipated as the population has higher prevalences of mental health disorders and traumatic experiences. Given that many early release veterans leave the military at younger ages, it may be expected that they would experience higher likelihoods of finding employment after transitioning to civilian life.

**Conclusions:** The results of this study will be a novel contribution to the expanding knowledge base of the impacts of early release on this key population. These findings may serve to inform policies and programming to better serve early-release veterans.