ABSTRACTS 2023
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HEALTH POLICY

Poster Presentations

P110: Where and how do organizations support families? Work/Life conflict and the identification of current practices for family-forward policies, practices, and programs

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Introduction: Lifestyle dimensions shape defense (i.e., armed forces families) and public safety families (e.g., public safety communicators, police). Lifestyle dimensions involve a range of demands that pose risks to the serving member and their family, including an unending need to respond to changing or competing demands which can lead to work-family conflict. Work-family conflict occurs when the demands of a work role make participating in a familial role more difficult, and when a family role impacts the fulfillment of occupational responsibilities. Research shows that work-family conflict is associated with high levels of absenteeism, employee turnover, and low recruitment. In order to foster family-forward policies and practices among organizations, we sought to better understand what motivates organizations to support their workers and the nature of these supports.

Methods: After consulting with a business librarian, we conducted an environmental scan searching five databases, resulting in the identification, and subsequent analysis, of 26 sources. In systematically assessing the peer-reviewed business literature, we organized the findings on the motivators and the nature of family-forward policies across various defense and public safety occupations to elucidate the nuances of high risk and demanding occupational requirements as intersecting with familial roles.

Results: Our findings reveal how organizations tend to develop family-forward policies to offset negative consequences on the employee and the organization. Specifically, policies are designed to enhance retention and recruitment of a highly skilled labour force, while optimizing job performance and productivity, and promoting a progressive, family-inclusive, organizational culture that strives to ensure employee job satisfaction.

Conclusions: The policies, practices, and programs we identified underscore the need to attenuate the work-family conflict that emerges for families of those employed in high risk and demanding occupations. The increased recognition of families serving alongside defense and public safety personnel, results in organizations aiming to respond, with best or evidence-informed practices, to the complex range of motivators (e.g., recruitment and retention, performance and productivity, and organizational culture and job satisfaction) for developing a family-forward perspective. Recognising the impetus for our study is the disjuncture between work and personal living, we sought to create a starting point for further discussion regarding how to ameliorate work-family conflict. As organizations increasingly recognize how employee satisfaction is very much dependent on the wellbeing of their families, who each have their own needs and experiences in relation to supporting their employed loved ones, the push to best support families, in their own right, must be prioritized.

HEALTH SERVICES

Podium Presentations

5D03: Building a National Framework Development for Supporting Bereaved Military and Emergency Services & their Families After Suicide in Australia

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Introduction: Military and emergency services personnel often experience repeated traumatic events which can lead to higher rates of suicidal ideation, attempts, and completions than the general Australian public. As such, there has been an influx of research focusing on suicide prevention and intervention within military and emergency communities over the last ten years. However, while it is widely acknowledged that postvention is often an act of prevention or intervention, there is a critical lack of research conducted in the postvention space for these communities. Beyond that, the families and co-workers of military and emergency service personnel who die by suicide represent a unique group with specific needs after the loss of their loved one which may not be addressed by generic, civilian resources and services, which is particularly concerning given the rates of military and emergency services personnel suicide. As such, in 2022 a program of study underpinned by a lived experience advisory committee was begun to develop a national framework & resource suite for supporting bereaved military and emergency services personnel and their families after a service personnel member dies by suicide. This study aimed to complete a comprehensive suite of studies which rigorously & thoroughly built an understanding of the knowledge, experiences, perceptions, beliefs, needs, and wants of military and emergency service personnel and their families after a service personnel dies by suicide.

Methods: This presentation includes four studies: an environmental scan of postvention after suicide research focusing on veterans, first responders and their families; a qualitative systematic review and meta-synthesis of the experiences and perceptions of bereaved family members of emergency service first responders and military personnel who have died by suicide; a qualitative systematic review

and meta-synthesis of the experiences and perceptions of bereaved co-workers of emergency service first responders and military personnel who have died by suicide; and a service provider gap analysis identifying current pool of service providers offering post-suicide grief & bereavement services suitable for defence and emergency services and their families

Expected Results: The combined results of these studies highlight a lack of coordinated policy, research, and health service provisions for families and co-workers of service personnel who die by suicide both internationally and within Australian contexts.

Conclusions: These foundational studies will be used to inform a mixed-methods multi-stage examination to address gaps in policy, clinical practice & service delivery, and research, informed by lived experience, with translational outputs and tangible, achievable recommendations on a national level.

PRIMARILY MENTAL HEALTH & WELL-BEING

Podium Presentations

1D01: Grief Experiences of Military and Public Safety Personnel Spouses/Partners: A Concept Analysis

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Introduction: For any spouse, losing a partner is devastating. Grief is a normal and commonly transient response to loss; however, for some, grief can become complicated and prolonged in which the distressing symptoms affect everyday functioning. It is not well understood how grief differs based on the partner's role (spouse vs. girlfriend/boyfriend) and between those whose partners died in the field or by suicide. To fill this gap, a concept analysis was completed to review the scholarly literature on grief-related concepts in spouses/partners of military and public safety personnel.

Methods: In consultation with a health sciences librarian, a systematic search was conducted in CINAHL, MEDLINE, PubMed, Embase, Web of Sciences, PsycINFO, and Sociological Abstracts in English using database-specific subject headings and keywords related to grief, military/Veteran, public safety personnel*, wife, husband, partner, spouse, significant other, girlfriend, boyfriend. Original research published in English up until September 2022 were independently appraised, and data extracted, by two reviewers.

Results: Thirty-six studies met the inclusion criteria. Twenty-four studies defined/described grief in either spouses or girlfriend, thirty-four studies reported on the associated psychosocial factors, twenty-seven studies reported on the

consequences of loss, and twenty-two studies provided recommendations for programs/benefits. Interestingly, eighteen studies focused on death in the field, two studies reported on loss related to suicide, five studies focused on both. Further, twenty studies reported on the grief experiences of wives, three focused on girlfriends, and thirteen did not specify between wife or girlfriend. It is noteworthy that there were no studies reporting on the grief experiences of male spouses/partners. We found that the grief experiences differ between wives and girlfriends and between spouses/partners who experience loss associated with death in the field vs. suicide related death vs. natural causes. Specifically, it was evident that wives and girlfriends experience grief differently; it is acceptable for wives to grieve, whereas girlfriends are expected to move on. Wives may also experience disenfranchised grief if they lose their husbands to suicide as those deaths are not viewed as heroic and are often not publicly mourned.

Conclusions: This is the first concept analysis that investigates the concept of grief in spouses/partners of military and public safety personnel. The intention of this study is to serve as a guide for future research and programming for spouses/partners that is tailored, evidence based, and effective.

1D03: Children with Special Education Needs or Disability in United Kingdom military families

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Introduction: Currently, little is known about the mental health needs of children with special education needs and/or disability (SEND) in military families. While having SEND does not necessarily result in mental health problems, children with SEND are more likely to experience mental health problems compared to their peers. This is partially due to institutional barriers relating to delayed diagnosis, disrupted access to specialist education or experiences of stigma. These institutional barriers might be particularly impeding for military families due to additional challenges, such as re-location, limited access to services, and parental separation. The current study investigated differences between children with and without SEND in both child and parent mental health problems among UK military families.

Methods: This is a secondary data analysis study using data from the KIDS Study. The KIDS Study is a study of military families which was established to explore the association between paternal PTSD and paternal deployment with a range of social, behavioural and educational outcomes among children. Data were collected online from parents, teachers and children directly if aged 11+ years. Children's SEND status was determined based on father, mother and teacher report.

The sample included 894 children aged 5-16 years, 115 of whom were identified as having SEND.

Results: The prevalence of SEND among children in our sample was 12.9% (n=115) which is comparable to the 7-10% prevalence rate reported in the UK general population. Children with SEND had significantly more mental health problems compared to children without SEND (ds = 0.55 – 1.09). Notably, 44.6% of children with SEND met criteria for a probable mental health problem compared to 13.6% of children without SEND. Few differences were observed for paternal mental health problems, however, mothers of children with SEND reported more depressive and PTSD symptoms (d = 0.56; d = 0.77 respectively) and were more likely to meet criteria for a probable disorder compared to mothers of children without SEND.

Conclusions: This study investigates the social, emotional, and behavioural functioning of children and the mental health of parents within UK SEND military families. It has demonstrated that within UK military SEND families both children and mothers report poor mental health. Further research is required to understand the lived-experience of military families (especially mothers) to understand the interlocking stressors of being in a military family and caring for a child with SEND, this will enable identification of areas for supportive interventions.

1D04: Reducing access barriers for military families: What the data from Virtual MFRC is telling us

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[1]Military Family Services

Program/Intervention Description: For more than 50 years, Canadian Forces Morale and Welfare Services (CFMWS) has delivered programs and services designed to improve the lives of Canadian Armed Forces (CAF) members and their families. Changes in demographics and digital landscapes, along with the private sector's response to these changes, is resulting in an increase in expectations from our members for timely, personalized, and relevant services. As the world becomes more and more technologically driven, the collective ability to support military families will be increasingly enabled by the ability of service providers to reimagine and embrace digital-age solutions for their constituents. Since 2018, Canadian Forces Morale and Welfare Services (CFMWS) has made a concentrated effort to expand the use of virtual programs to help ensure families receive timely support, particularly those in remote and underserviced areas all across Canada. One such initiative is the Virtual Military Family Resource Centre (Virtual MFRC), which provides mental health and social supports to Canadian Armed Forces Members, Veterans and their families – immediate and extended.

Evaluation Methods: Over the past four years, the Virtual MFRC has used evidence-based practices, based on the foundational research of the Comprehensive Military Family Plan and surveys published by Director General Military Personnel Research and Analysis (DGMPRA).

Results: With a combination of staff training, Feedback Informed Treatment (FIT) and measures of program reach, Virtual MFRC has been able to increase digital services to families each year, serving more than 7,000 military families in 2022. Moreover, the results of the Outcome Rating Scales used during ongoing emotional support sessions demonstrate outcomes mostly on par with other mental health supports, including some clinical modalities.

Conclusions: Program evaluation and usage data suggest that the virtual psychoeducation and psychosocial support have been key resources for our Canada military family population, pre- and post-Pandemic, particularly in the areas of mental health and relationships.

1D05: Military family financial well-being and stress

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[1]Canadian Forces Morale and Welfare Services

Introduction: Over the last ten years, there has been a growing body of research on the realities of Canadian military families. Internal systemic reviews and program audits, Defence-wide studies and external research have all contributed to an increased understanding of the experiences and the needs of Canadian military families and are informing the direction of services to better meet those needs. In many of these studies, families have increasingly identified financial stress as one of their most common and significant military lifestyle challenges.

Methods: Canadian Forces Morale and Welfare Services reviewed over 100 reports and analysed the demographic data of CAF personnel and their families in order to document the scope of the issues, the scale of the number of families affected by those issues, and potential recommendations and strategies to improve their experiences.

Results: Through this scoping review, financial stress emerged as one of six main common challenges facing military families. Military families identified financial stress as one of their two top sources of day-to-day stress, and half of all families reported that they had been struggling to keep up or falling behind with bills and other financial obligations. CAF household debt loads are higher than the average total debt for all Canadian families.

Geographic relocations due to postings has been identified as having a significant financial impact on families. This impact

is due to changes in the cost of living of living at the new location, cost of housing, and changes in the hours/wages of both the military member and the civilian spouse. For many, postings have a negative impact. For a few, postings improve their financial situation.

The negative financial impact of postings is commonly due to changes in spousal employment. The secondary income from civilian spouses is a key indicator of financial well-being for military families. Even though a dual income family model is not particularly compatible with the current military lifestyle, most military families must embrace it like the majority of the general population. Yet relocations due to postings frequently results in the loss of the spousal's seniority, hours, wages or even any employment at all.

Greater financial stress and instability has been shown to reduce psychological well-being, life satisfaction and marital satisfaction.

Conclusions: Families have identified financial stress as one of their most common and significant challenges, in some cases caused by or aggravated by the military lifestyle. Efforts are needed to improve their financial well-being and stability.

2D01: PSPNET Families: Evaluation of a Wellbeing Hub for Public Safety Personnel Families

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Program/Intervention Description: PSPNET Families Wellbeing Hub was created to support Public Safety Personnel (PSP) families. This evidence-based wellbeing hub complements the existing Internet-delivered Cognitive Behavioural Therapy (ICBT) programs for PSP, PSPNET; we adapted an ICBT Wellbeing Course for spouses and significant others (SSO) of PSP and built upstream psychoeducational and relational resources for PSP families. The hub provides culturally competent, family-centred, and trauma-informed mental health resources that are focused on prevention, addressing the unique convergence of occupational risks and requirements shaping PSP families.

Evaluation Methods: A developmental evaluation of PSPNET Families was conducted. PSP families and research consultants were involved in program development and provided insights throughout all phases of the project. Notes and transcripts from focus groups and interviews of SSOs of PSP and larger online town hall meetings attended by PSP family members offered qualitative data regarding the focus and content of the PSPNET Families Wellbeing Hub. Quantitative data were collected from web analytics and feedback surveys linked to the website providing the number of online visitors, pages visited, length of engagement, and feedback regarding likes and dislikes.

Results: Focus groups and town hall meetings involving PSP families provided direction, affirmation, and evaluation of the psychoeducational resources. The Hub has been described as both validating and helpful. Research consultants from diverse disciplines provided insight that helped shape scope and breadth and refine language and content. The SSO Wellbeing Course has been iteratively improved based on SSO feedback informing development of additional content to address unique needs (e.g., expanded stories, resources on moral injury, relationship challenges) and procedural improvements to ICBT (e.g., flexibility in timeline, audio content). The research team responded to extensive feedback from the focus groups and town halls to improve the Hub. Current directions include improving Hub navigation, expanding dissemination efforts and French translation.

Conclusions: The launch of the PSPNET Families Wellbeing Hub has been a step forward in the provision of resources for PSP families. The involvement of PSP families from the beginning along with the commitment of a multidisciplinary team of researchers and educators has been critical to the process, supporting the creation of a resource that is unique internationally.

2D04: Considerations on the application of family theories, models, and frameworks within adult rehabilitation and recovery following acquired injury or illness

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Introduction: The health and well-being of veterans and military members are key concerns and the focus of research. Despite the need to understand rehabilitation and recovery processes, the role that families play is often overlooked. Bridging family science with rehabilitation science is an opportunity to look at the intersection of the different fields through a lens that is inherently family oriented, by applying family theories, models, and frameworks to studies on acquired illness and injury. The goal of this project is to examine the use of family theories, models, and frameworks within research focusing on rehabilitation and recovery following life-altering injury or illness acquired in mid-to-late adulthood.

Methods: This study was conducted following the Joanna Briggs Institute (JBI) methodology for scoping reviews. Four databases (MEDLINE, PsycInfo, CINAHL, and Embase) were searched using terms such as "families" AND "injury" AND "rehabilitation" AND "theory". All the results were subsequently imported into Covidence where duplicates were removed and screening conducted. Both title and abstract screening and full text review were conducted by two independent researchers according to the inclusion/exclusion criteria. Conflicts were resolved though discussion with the research team. Of the initial 4334 search results, only 18 studies met the inclusion criteria.

Results: Three themes emerged from the scoping review, offering insight into how family theories, models, and frameworks can be transferred to the rehabilitation context. These are *Old Life vs New Life; Influencing Factors;* and *Individual vs Collective Change*. Beyond these three themes, the results also highlighted a significant amount of overlap between theoretically guided and non-theoretically guided work being conducted within rehabilitation. The overlap between the two fields highlights the applicability between fields, and also the knowledge that each lens brings to the topic. Beyond the applicability, the overlap also shows evidence of duplication across fields and the development of information in silos.

Conclusions: The results of this scoping review display the lack of research which combines family and rehabilitation science. The few studies with a dual focus highlight the applicability and value of integrating these two fields. Bridging the two fields highlights the gaps in each and the potential for growth when both are combined, informing the field of veterans and families navigating recovery from illness and injury.

4D01: What Seven Key Ingredients that Strengthen Children and Families Are Found in Existing Programmes Aiming to Build Resilience in Military Parents?

*Hébert, Michèle L., PhD[1]; **Aquin, Carley, MEd[1];** Brassard, Leah, MA[1]; Brémault-Phillips, Suzette, PhD[1]; Sevigny, Phillip, PhD[1]*

[1]University of Alberta

Program/Intervention Description: There is consensus that military parents (MP) need to be strong yet flexible (resilient) to face and overcome military life adversities. Almost half of military members/Veterans are parents of children/adolescents, and almost half of military family members are children/adolescents. MP life adversities may include a combination of frequent relocations, separations, isolation, help-seeking for medical/social and school services, military spouse (civilian) un/under-employment, risk related to injury or death, challenging reintegration into civilian life, and academic performance challenges for children/youth. More than a third of MP report that such stressors lead to

physical/mental health concerns. Additionally, compared to civilian parents, MP of children/youth with neurodiversity may experience heightened stress due to separations or loss, compounded with roadblocks attaining disability-specific help. In about one in 10 military families who have a neurodiverse child, the typical childcare work hours and their inconsistent responsiveness to emergency and irregular demands with military life cause deleterious family burden. Strength/flexibility is defined as a process implicating multi-systems in a broad eco-social context, considering seven key strength-building ingredients: relationships, strong identities, sense of control, social justice, help-seeking, sense of belonging and shared culture. While research is growing on strength/flexibility-building as an eco-social phenomenon in children/youth and families who face life difficulties, evidence on strength/flexibility-building as an eco-social phenomenon in MP is virtually unknown, leaving questions about evidence-based MP-centred strength/flexibility-building. Thus, the overarching research objective was to determine the presence of seven key strength/flexibility-building ingredients in programmes that aim to build strength in MP.

Evaluation Methods: Content analysis is underway to quantify and qualify the presence of these concepts/ingredients in 15 programmes identified either in the literature or on the web that aim to build strength/flexibility in MP. Findings from our scoping review on military family strengthening programmes and evidence from the strength/flexibility-building literature helped inform this analysis.

Results: To date, programme analysis revealed that all programmes include a focus on relationships and sense of control, the majority focus on strengthening identities, over half concentrate on a sense of belonging, just over a quarter incorporate a shared military family culture, few consider help-seeking and none focus on social justice.

Conclusions: Preliminary results suggest that no existing MP programme concentrates on all seven key strength/flexibility-building ingredients. This finding is leading our team and military community to co-design an innovative programme.

4D02: Understanding Canadian Policies and Contextual Factors that May Expedite or Inhibit the Implementation of Evidence-based Military Family-centred Strengthening Programming

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[1]University of Alberta; [2]Heroes in Mind, Advocacy and Research Consortium (HiMARC)

Introduction: "Strong, Secure and Engaged", defence policy championed by the Canadian Armed Forces and Veterans Affairs Canada, focuses on ensuring that military families (MF)

are resilient. Resilience is defined as being strong yet flexible in response to life adversities. MF with young children may experience deployment-related life adversities, comprising separations and relocations that can induce family distress and mental health concerns. Evidence on effective strength/flexibility-building programmes in MF is promising. Scholars acknowledge that family strength/flexibility-building success depends on dynamic multi-systems in which families live. Such ecosystems are governed by regulations/policies that influence how programmes are implemented/delivered; to whom, by whom, when. However, anecdotal reports from decision-makers at Canadian Military Family Resource Centres highlight inter-provincial/territorial inconsistencies in programme applications, making it difficult for decision-makers/policymakers to understand which evidence-based programme to implement across Canada. Therefore, we aim to understand facilitators and barriers for programme implementation. Specifically, we wonder what Canadian policies may either expedite or inhibit the adoption of an evidence-based MF-centred strength/flexibility-building programme.

Methods: This research will be achieved in a two-step environmental scan. We are consulting the grey literature to identify policies at the national and provincial/territorial levels that may impede or facilitate programme implementation. Grey literature is being analysed using Strengths, Weaknesses, Opportunities, Threats analyses (SWOT). Concurrently, we are conducting 45-minute semi-structured, audio-recorded interviews/focus groups (I/FGs) with up to 80 community members from four groups: (1) military members/Veteran, (2) family members, (3) service providers, (4) decision-makers/policymakers. Purposive/snowball sampling is being applied to counter sampling bias and ensure diverse perspectives. I/FGs will be analysed using qualitative description to help inform MF-friendly policy. Data collection will cease when no new themes emerge, and variation in participant diversity is attained. Findings from these initial steps will help inform subsequent implementation phases on a national scale.

Expected Results: To date, preliminary barriers that were identified include cultural insensitivity to MF priorities/commitments, and language used to define or describe MF "resilience", where service providers may inadvertently deter MF from participating by inviting MF to yet another "resilience"-building programme. Preliminary facilitators include a commitment from decision-makers/policymakers to build strength/flexibility in MF, suggesting that our project is timely. Additional facilitators include pandemic-related policies for hybrid/online delivery, and community resource availability/capacity, especially in urban regions.

Conclusions: Programme implementation planning is currently being mapped and discussed.

4D03: Building Community Capacity by Designing a Novel Pan-Canadian Military Family-centred Strengthening Programme with Military Families, Service Providers and Decision-makers

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[1]*University of Alberta; *[2]*Heroes in Mind, Advocacy and Research Consortium (HiMARC)*

Introduction: Children from Canadian Armed Forces families face numerous life adversities related to deployments, including repeated separations. Military spouses living in civilian neighbourhoods report that relocations are among their most important challenges. In more than half, relocations cause career sacrifices, financial strain, and in some cases unemployment, thus also negatively impacting spousal wellbeing. Moreover, active-duty military parents are often minimally involved in daily child/family routines due to the nature of their work. Further, their reintegration into civilian family life is among their top challenges. These military life difficulties on one hand reduce family relationship quality and children's wellbeing and on the other hand increase family help-seeking for these children's mental health as compared to civilian families. Help-seeking includes navigating one's environment to access help services and other support. Indeed, seamless navigation is one of seven key ingredients that together build strength/flexibility in children/families. While international leaders agree that strong yet flexible (resilient) military families (MF) are required to overcome military life challenges, existing strength/flexibility-building programmes focus more on individual wellness than on ecosystemic capacity-building. There is no known programme that strengthens MF by also strengthening help-seeking capacity from a multi-systemic perspective. Therefore, collectively with MF, service providers and decision-makers, we aim to co-design a novel MF-centred strengthening/flexibility programme to build community capacity locally, then nationally. Evidence from literature reviews, programme analysis and preliminary engagement with community members serving MF informed the initial programme co-design.

Methods: This qualitative research is founded on Collective Impact and Participatory Action Research. Military parents, providers/decision-makers (military and civilian) in the Edmonton region and our team are co-designing the programme. A convenience sample of 12 community members is being used to allow for timeliness and feasibility of programme development, followed by a three-wave evaluation that will involve a large, diverse sample.

Results: A three-part MF-centred strengthening/flexibility programme has been mapped. First, we co-designed a six-modular workshop series for military parents who have

young children. Second, we are also co-designing a training for service providers to facilitate and deliver the parent workshops in hybrid format, either online or in-person, and with synchronous and asynchronous learning/practice options. This parent curriculum will soon undergo Wave 1 pilot testing. Third, a provider-to-provider training will next be mapped to broaden our reach to all Canadian MF, anywhere.

Conclusions: Instructional implications and future research directions are discussed.

4D04: Engaging Community Members Who Serve Military Families to Map a Plan for Programme Expansion Across Canada

Hébert, Michèle L., PhD[1]; **Sevigny, Phillip, PhD[1]**; Brémault-Phillips, Suzette, PhD[1]

[1]University of Alberta

Introduction: Families are acknowledged as vital for military member/Veteran effectiveness. The majority of military families (MF) reside in civilian neighbourhoods, where MF rely on the same services as civilians for family wellness. Civilian-based service providers are often found to be unaware of military culture and life stressors and their impact on MF. Indeed, based upon initial formal/informal conversations with community leaders and MF, our team learned of apparent disconnections between service providers and MF preventing them from engaging with one another. Thus, our team is eager to support the broad-based implementation of family-centred strength/flexibility-building programming, and to capacity-build and strengthen communities for MF who live on base or in civilian neighbourhoods. Thus, to facilitate operationalization of this forward-thinking vision, our overarching research aim is to expand a military family-centred strength/flexibility-building programme to facilitate pan-Canadian community capacity. This research project is helping to map the co-expansion plan to implement this programme across Canada.

Methods: This objective is being met through community engagement/World Conversation Cafés. A collective community impact and Participatory Action Research are providing guidance on this community engagement. Our military family-centred programme expansion is partly informed by the cascading resilience model that combines both community capacity-building and family capacity-building. In partnership with Military Family Resource Centres (MFRCs) this project is framed where MFRCs are hubs connected to community services in schools, hospitals, non-government organisations. Using snowball sampling, we will engage with over 100 military leaders and members from four community groups: (1) military serving members/Veterans, (2) military family members, (3) providers serving MF,

(4) decision-makers/policymakers delivering MF services. The sample will be diverse with wide participant representation in each group–adult sex, gender, urban/rural, age, role, years of experience or service, professional discipline, number of children in the household or served, and children age, sex, gender and neurodiversity–, to counter sampling bias, and to ensure diverse experiences and perspectives. Thematic analysis will be applied in stepwise sequence from narrative inquiry, in-depth reflection and consensus/validation meetings to identify emerging themes.

Results: To date, we held eight consultations with a total of 55 community members from the four groups. This engagement is providing real-time data, findings and context-specific realities throughout the project that will facilitate programme co-expansion.

Conclusions: Community engagement will be central to programme expansion planning by engaging government and non-government actors. Future research directions are discussed.

6D01: Who am I? A qualitative exploration of the identities of spouses/partners of United Kingdom Armed Forces Veterans

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Introduction: Military spouses and partners encounter a number of unique experiences as a result of being in a relationship with someone in Service, all of which can influence their health, well-being, and sense of personal identity. However, these experiences are often overlooked in research, with little literature describing how military Service affects military partners and particularly any impacts on, or changes to, their identity. This study aimed to explore military partners perceptions of identity following transition and during post-service life, and influences on their mental health and well-being.

Methods: Data comes from the UK Veterans Family Study (UKVFS), a mixed methods study of Armed Forces Veterans, their spouses/partners, and adult children. 38 current or former partners of Veterans (32 female, 6 male; n=10 from England, n=10 Scotland, n=9 Wales and Northern Ireland) took part in semi-structured interviews covering their experiences during and after Service and their mental health and well-being. Data was analysed using thematic analysis and social identity theory.

Results: Participants described holding multiple social identities including parent, employee, friend, and member of the Armed Forces community. These identities interacted and

changed over time and over the life course. Military life was described as a key influence on partner identity, even after leaving service, largely due to impacts on partner careers. Long-term impacts on well-being were outlined, including reduced self-esteem and confidence, although others reported pride in their resiliency and ability to cope with the challenges of post-service life. Post-service life was described as creating greater opportunities for employment but also a sense of loss on leaving the Armed Forces community.

Conclusions: While data analysis is ongoing, the initial findings raise awareness of the positive and negative influences that life during and after military service can have on the perceived identities of partners of UK Veterans. Findings further highlight the long-term influences of some experiences on health and well-being. Limitations include a lack of representation of male partners and LGBTQI+ families.

Given the interaction of identity, health and well-being, future research should attempt to provide deeper understanding of the connection between the two and identify particular points where partners may need additional support. Research should also address how current policies such as the UK Armed Forces Families Strategy 2022-32 may be improved to support Veteran families and how services delivered to the military or Veteran family as a unit may aid in transition and life after Service.

6D03: When Trauma Comes Home: The impacts of first responder trauma on their partners

Foley, Jill, DCP[1]

[1]*Yorkville University*

Introduction: Police officers are exposed to high levels of trauma and stress during their work and experience higher rates of mental illness and post-traumatic stress than their non-policing counterparts. However, they do not experience these traumas in isolation; families and partners of affected officers are integrally connected to navigating such trauma. Police officer partners are often impacted by workplace trauma due to the changes in personality, mental health, and behaviours, yet, little research has explored the implications of such trauma experiences on officers' relationships and intimate partners. As such, this research paper asks: 1) what are the experiences of partners of police officers in regard to trauma experienced in the profession?; and 2) what counselling supports are needed for partners of police officers?

Methods: A phenomenological approach, consisting of interviews with twelve semi-structured questions, was used to explore the essence of being the intimate partner of a police officer and their experiences concerning counselling. A total of fourteen partners of police officers who were recruited through Canada Beyond the Blue were interviewed.

Interviews were conducted virtually; data were transcribed and then reviewed for accuracy. QDA Miner Lite was used to code, annotate and analyze the data.

Results: Three main themes emerged, each with several subthemes. The first of these themes is the Partner Experience, which includes themes of parenting responsibilities, impacts on relationships, responsibility implications for the non-policing partner, impacts of shift work, safety concerns and pride for their partner's role were noted. The second theme, Line of Duty Implications, included subthemes including behavioural changes, mental health challenges, and experiences of those with specialized roles within policing. The final subtheme, Treatment Barriers and Needs, included subthemes of stigma, therapist skills, and intimate partner needs as related to accessing support.

Conclusions: The findings of this study principally reveal that more effective treatment services should be tailored to police officers and their intimate partners in managing post-traumatic stress. These results convey the importance of developing culturally responsive training resources for mental health clinicians working with police officers and their partners and the need to study better the mental health impacts of policing work on the broader family unit.

6D04: Trial Wife: A Gendered Mapping Review of Divorce Demographic Data reported in the Journal of Military, Veteran, and Family Health Research from February 2015 to April 2023

Dunleavy, Rachel, BEd[1]

[1]*St. Stephens College*

Introduction: "Trial Wife" is slang for a Canadian Armed Forces (CAF) member's first wife, which is indicative of how common marital breakdown is perceived. This is not surprising given the additional stressors of military couples and higher Intimate Partner Violence rates than civilian populations. Canadian Military Family Resource Centres report couple/partner relationship support as their most requested service. Since 1997 there has been a 50% drop in married CAF members while single and common law CAF members doubled. In 2004, 23.6% of CAF members may have divorced. The USA passed the "Uniformed Services Former Spouses' Protection Act," in 1982, highlighting the need for Canada to address the unique needs of their military and veteran populations. Divorce may be negatively impacting operational effectiveness and creating systemic issues for civilian spouses/partners and civilian children.

The purpose of this study is to develop an epistemological baseline of divorce in military and veteran populations by mapping the nature, scope, and function of this concept using empirical demographic data and related variables reported

in the Canadian Journal of Military, Veteran, and Family Health Research (JMVFH), supporting future evidence-based research and policy/clinical decision making. Data collection is complete and final results should be available by Spring 2024.

Methods: This study is a preliminary mapping review of publications in the JMVFH between February 2015 and April 2023, using the search term "divorce". Articles containing no demographic data were excluded. Demographic data and relevant variables were extracted and aggregated. Analysis and mapping are ongoing. Mapping reviews are intended to be quick and preliminary and include a PRISMA flow chart among the charts and diagrams presented.

Results: "Divorce" as a search term in the JMVFH returned 95 articles. After excluding 33 articles, 62 articles were included. Preliminary findings suggest that:

the nature of divorce demographic reporting varies extensively between studies, making it difficult to compare divorce among and between populations;

the scope of divorce intersects with mental and physical illness, homelessness, gender, single parenting, stress, retirement, and financial stability; and

the function and impact of divorce in military operations has not been considered in the literature.

Conclusions: Preliminary analysis indicates that divorce is an important and overlooked demographic variable that when considered empirically in data analysis reveals the impact of this stressor on the military-domestic complex.

6D05: Understanding the impact of Service life on the financial stability of military families

Slapakova, Linda, MPhil[1]

[1]RAND Europe

Introduction: The unique features of Service life, such as geographic mobility and frequent separation, have various impacts on the wellbeing of military families. However, there are significant gaps in understanding how Service life shapes the financial aspects of family wellbeing, despite the recognition that financial stress and instability may increase the risk of negative mental health outcomes. A study was therefore conducted to explore the prevalence and drivers of financial instability of military families in the United Kingdom (UK) as well as the nature and potential limitations of finance-related support for military families. This presentation will report on the aspect of the study exploring Service-related factors that affect the financial stability and wellbeing of military families.

Methods: The study was conducted through a convergent mixed-methods research design, whereby quantitative and qualitative data was collected concurrently and subsequently integrated and analysed in relation to the research questions. Data was drawn from two data collection activities: firstly, a survey was conducted with 436 participants including serving and ex-Service military personnel and their partners; secondly, 16 semi-structured interviews were conducted with policy-makers, Armed Forces gate-keepers, the charity sector and other support organisations working with the Armed Forces Community. Analysis of the data was conducted through descriptive statistical analysis and contingency table analysis of the quantitative survey data and reflexive Thematic Analysis of qualitative survey comments and interview data.

Results: Data analysis is ongoing: preliminary findings indicate that the study participants perceived Service life to have both positive and negative impacts on family financial wellbeing. Key Service-related factors with a positive impact were access to subsidised housing, the value of the Armed Forces pension, non-operational and operational allowances, and access to tailored statutory and non-statutory support services. Key factors with a negative impact were the accessibility and affordability of childcare, hidden costs of relocation, out-of-pocket expenses related to frequent separation, detrimental impacts of career management practice on financial planning, and limited partner employment opportunities. Differences were identified between perceptions of survey participants and interviews, particularly with regard to the perceived value of Armed Forces compensation.

Conclusions: Emerging study findings show that while military life provides various financial benefits to Service families, the Service-related financial risk factors are multifaceted and have various implications for the broader wellbeing of military families. They highlight the need to further explore the financial implications of Service life, as well as the value of military compensation, from a holistic family perspective.

Poster Presentations

P101: Co-creating an evidence-informed mental health education hub for young Family members of Veterans living with an operational stress injury: An overview of the process and key lessons learned

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Brief Description: Co-creation is a form of engagement where individuals, communities and organizations work together to develop a product, service or study that meets real-life needs and solves real-world problems. Co-creation can take many forms but typically involves consensus-based decision-making.

Evidence suggests that co-creation has multi-faceted benefits, from improved quality, relevance and impact of outputs, to increased empowerment, confidence, collaboration, and knowledge for those involved. This process can be particularly beneficial for creating knowledge mobilization products. However, there is limited work or guidance describing the process of engagement with youth from Canadian military and Veteran Families and for co-created knowledge mobilization products ('knowledge products') in particular. This contributes to a gap in practical knowledge.

As such, this abstract summarizes the process and key lessons learned, including challenges and mitigation strategies, from a recent project involving the co-creation of an evidence-informed mental health education hub for young Family members of Veterans living with an operational stress injury (MindKit.ca).

Patient Population: Youth from Canadian military and Veteran Families between the ages of 15-24 years.

Results: Co-creating the mental health education hub involved three key components: (1) assembling an advisory committee of youth and subject matter experts; (2) holding virtual consultation meetings to solicit input on key stages of development; and (3) prioritizing, compiling and integrating feedback into the final knowledge products.

The project team identified three key challenges and various ways to mitigate them.

One challenge was ethical concerns, particularly the concern of doing more harm through engagement on sensitive topics with a potentially vulnerable group. Mitigation strategies included providing clear communication, offering participation options, providing support resources, screening members and seeking parental consent, and prioritizing authenticity.

A second challenge was lack of knowledge and training for engaging with youth from Canadian military and Veteran Families. Mitigation strategies included drawing on organisational training in group facilitation and trauma-informed approaches as well as connections with community members.

A third challenge was participation barriers for youth advisory members (e.g. meeting times and format). Mitigation strategies included brainstorming potential micro-, meso-, and macro-level participation barriers prior to engagement, offering multiple options for participation, and adjusting timelines and expectations.

Conclusions: This abstract describes the process of co-creation with young Veteran Family members, using a specific example. There were key lessons learned as part of this process, including components, barriers and strategies for engagement. This information could be useful for researchers, individuals or organizations who want to co-create knowledge products with this group.

P102: School Transitions of Adolescents from United Kingdom Armed Forces Families: A Qualitative Study Exploring the Policy, Practice, and Research Landscape

Hill, Shannon, MEd[1]; **Gribble, Rachael, PhD[2]**; Fear, Nicola, PhD[2]; Cramm, Heidi, PhD[1]

[1]Queen's University; [2]King's College London

Introduction: In 2011, the Armed Forces Covenant was introduced into legislation in the United Kingdom. The purpose of the Covenant is to raise awareness of the challenges that serving personnel, Veterans, and their families can face, while also ensuring that serving personnel, Veterans, and families do not face disadvantage in the provision of public services and supports. Despite children's education being an area of focus within the Armed Forces Covenant, there continues to be a lack of research within the United Kingdom on the educational experiences of children and youth from armed forces families. As such, stakeholders within the United Kingdom rely heavily on American research, which has provided the foundation for what is known about the educational experiences of military-connected students. While American research can help provide general insights into the educational experiences of military-connected students, the findings are reflective of a particular social and political context, making them less applicable in other countries. To address the current knowledge gap within the United Kingdom, a qualitative study was conducted to better understand how the school transitions of adolescents from armed forces families are being supported in England through policy, practice, and research.

Methods: Purposeful sampling was used to recruit stakeholders working across policy, practice, and research with a remit for supporting adolescents during transitions between schools because of a military-related relocation. Seven participants from England were recruited, with varying representation across policy (n=1), practice (n=5), and research (n=1). Data were collected virtually using individual semi-structured interviews, and lasted, between 50 and 97 minutes in length.

Results: Preliminary findings are guided by a thematic analysis approach and supported using MAXQDA, a qualitative analysis software program. The findings suggest that, to date, participants felt a larger emphasis had been placed on understanding and supporting the educational experiences of younger children rather than of adolescents. Resources and supports developed to support school transitions were

seen as tending to target parents and/or educators. As such, preliminary findings suggest that the adolescent experience and voice is not well represented across policy, practice, and research in England (UK). The poster presentation will include the final themes identified from the data analysis.

Conclusions: This is the first UK study to explore how the school transitions of adolescents from armed forces families are being supported in England through policy, practice, and research. Findings from this study will contribute to both the UK and international evidence bases.

P103: OUTCAN 2022 Community Needs Assessment

Habiyakare, Clement, MPH[1]; Manser, Lynda, MMgt[1]

[1]*Canadian Forces Morale and Welfare Services*

Introduction: Relocating outside of Canada (OUTCAN) is a challenging time for many military families. The OUTCAN selection process is highly selective and can begin more than a year before relocation. In some circumstances, OUTCAN families find themselves living in a new country where the culture and language may be totally different to their own. To provide recommendations to improve levels of supports, MFS deployed a community needs assessment survey specifically targeted to OUTCAN families. This research provides a comparative analysis of the needs of OUTCAN families posted in both Europe and the United States.

Methods: Research participants were recruited directly through our email distribution list and social media channels. 179 individuals in Europe and 184 individuals in the United States completed an online questionnaire between May and September 2022. Survey questions explored the six domains and factors of Canadian military family resilience: nurturing family communication/ problem-solving processes; developing family organization patterns; maintaining expectations and boundaries; aligning family's belief system; connecting to family support system; and supporting physical and psychological health of individual family members.

Results: For most respondents, relocating OUTCAN has been a positive experience. Respondents would recommend an OUTCAN posting to other individuals or families; accept another OUTCAN posting; and stay in contact with people they met while OUTCAN. However, they perceive that there are differences in the levels of services between INCAN and OUTCAN postings, Europe and the United States, as well as between cluster locations and remote individual postings. There are areas where service providers could make improvements to facilitate connections between OUTCAN families and improve their self-confidence to manage general health and life stresses, as well as adapting to a new culture. Finally, some respondents shared how family sponsorship in the host country is strictly localized, limited by volunteers of

funding pools.

Conclusions: This research will be valuable to researchers, service providers and policy-makers wanting to better understand OUTCAN relocations. Findings highlight the need for a standard service delivery model for remote/isolated families outside of cluster locations. Cultural adaptation also seems to be a bigger barrier for families relocating to Europe than in the United States. Further research is required to fully understand the role of family sponsorship in helping OUTCAN families resettle abroad.

P104: Supporting the School Transition Experiences of Adolescents Living in Canadian Military Families: An Educator Perspective

Hill, Shannon, MEd[1]; Skomorovsky, Alla, PhD[2]; Albright, David L., PhD[3]; Cramm, Heidi, PhD[1]

[1]*Queen's University;* [2]*Director General Military Personnel Research and Analysis;* [3]*The University of Alabama*

Introduction: Relocating three times more frequently than their civilian counterparts, military-connected students experience constant school transitions and are put at increased risk of experiencing academic, social, emotional, and behavioral challenges. For adolescents living in military families, these challenges can become particularly amplified, especially if they have special education needs. Research indicates that educators and schools can act as protective factors for at-risk students. To date, American research has provided the foundation for what is known about how the school transition experiences of military-connected students are supported by educators and schools. Given key contextual differences that exist between the United States and Canada, as well as current limitations with Canadian data, it is unclear how representative the American findings are of the Canadian experience. To address the current gap in Canadian knowledge, a larger two-phased qualitative study, informed by an ecological school transition framework, was conducted to (1) provide an in-depth, multi-perspective understanding of the school transition experiences of adolescents living in Canadian military families and (2) develop policy and program recommendations. This presentation will report on the educator findings from Phase One.

Methods: Phase One of the larger qualitative study was guided by an interpretative phenomenological analysis (IPA) approach. Using a demographic survey and semi-structured interviews, data were collected from five educators with intermediate-senior qualifications (Grades 7-12). Three participants identified as male, with two participants identifying as female. Participants held various roles within the schools they worked (e.g., principal, classroom teacher, etc.). Number of years working as a certified educator ranged from six to 25 years. Participants estimated that military-connected

students made up less than 10% and up to 60% of their school populations. Three of the five participants had a personal connection to the military.

Results: Using an IPA framework, four themes emerged from the data: (1) the school transitions of military-connected students should be treated the same but differently than civilian students; (2) having a "culture of knowing" is important when supporting the school transitions of military-connected students; (3) there needs to be a shared responsibility in supporting school transitions; and (4) there are missed opportunities at the high school level for professional development and engagement with Military Family Resource Centres.

Conclusions: As the first Canadian study conducted on this topic, the findings of this study are meaningful and align with federal priorities outlined in *Strong, Secure, Engaged*, which include improving support offered to Canadian military families during times of relocation.

P105: Research-informed services designed to enhance family resilience

Manser, Lynda, MMgt[1]

[1]Canadian Forces Morale and Welfare Services

Program/Intervention Description: Military families provide strength to the uniform. But families are not always resilient, and some require support. Canadian families are also changing. The way services need to be delivered must change with them. A supported and a supportive family means a healthier and happier family, which in turn, can provide strength to the uniform, increasing operational readiness and retention. Military Family Services has developed and is implementing a new Strategic Framework for the Delivery of Services to Military and Veteran Families based on research.

Evaluation Methods: There is a growing body of research on the realities and resilience of Canadian military families. Internal systemic reviews and program audits, Defence-wide studies and external research have all contributed to an increased understanding of the experiences and the needs of Canadian military families. We now better understand the different factors that influence the resilience of military families, specifically those risk and protective factors that are unique to the military lifestyle largely resulting from operational requirements.

Concurrently, strategies were analysed for best practices in order to provide guidance in the design of comprehensive and responsive services that best assist families to enhance their protective factors and mitigate risk factors, resulting in increased family resilience.

Results: As a result of this research, we now have a comprehensive picture of the state of Canadian military families. We have a better understanding of the specific risk and protective factors involved in their resilience at a family level, especially those that are directly resulting from operational requirements and military supports. Based on this evidence, a Canadian Military Family Resilience Model was developed. This model acts as a guide for the development of effective services for military families that mitigate risk factors and increase protective factors. The risk factors involved in military family resilience point to the "why", "what" and "when" of the services that families need. And the protective factors show us the "who", "how" and "where" of the services needed. This model is currently being tested through a Strategic Framework for the Delivery of Services to Military and Veteran Families across all military communities in Canada.

Conclusions: Families are changing. So are their needs. The way services need be delivered must also change. By developing a model for Canadian military family resilience, supports are now designed that enhance military family resilience, thereby increasing family well-being. A supported and a supportive family can, in turn, enhance personnel readiness and retention.

P107: Putting Veteran Families First: Development and Preliminary Evaluation of a Veteran Family Education Program to Foster Intergenerational Resilience

Noyek, Samantha, PhD[1]; Abbey, Brenda, PhD[2]; Pavlova, Maria, MSc[1]; Joly, Lauren, PhD[3]; Hoppe, Tom, MSc[4]; Nania, Cara, MSc[1]; Knight, Sarah[2]; Bernier, Emily, BA[1]; Noel, Melanie, PhD[1]; Steve, Critchley[2]

[1]University of Calgary; [2]Can Praxis Organization; [3]Alberta Health Services; [4]Chronic Pain Centre of Excellence for Canadian Veterans

Program/Intervention Description: Mental and physical health issues prevalent in Veterans can confer risk for spouses and children. Mental health educational programs that support entire Veteran families are crucial. We developed a program to deliver psychoeducation and therapeutic skills for Canadian Veterans and their spouses and children. This program drew from scientific evidence on resilience in the face of trauma, and evidence-based therapeutic skills used in a variety of child mental health populations (e.g., dialectical behavior therapy).

Evaluation Methods: The program was co-developed with clinical psychologists, educators, Veterans, and researchers. Families of Veterans living with an operational stress injury participated in this two-day intensive educational program, based on scientific evidence, certain dialectical behavior therapy education and techniques, and equine-assisted learning. Participating families completed a psychometrically-

sound battery of questionnaires to assess demographic characteristics, military background, and mental health (e.g., PTSD, anxiety, depression) and physical health (e.g., pain) at baseline and follow-up. Follow-up surveys included measures of program acceptability/feasibility.

Results: Demographic, baseline, and follow-up data for 14 participants was collected and analysed. Veterans (N=4, M_{age}=20.3 years), reported years of military service M_{years}=17, and age when joined the military M_{age}=20.3 years. All Veterans were men, identified as White, reported current chronic pain (i.e., pain lasting ≥3 months), and reported above clinical cut-off for PTSD, anxiety, and depression. Spouses (N=4, Mage=39.8 years) identified as white (N=3) and Latin American (N=1). Three spouses reported chronic pain and 100% had mild levels of anxiety. Youth (N=6, M_{age}=14.2 years) included 3 boys and 3 girls. Five youth identified as white and 1 identified as Indigenous and Latin American. Youth did not have current chronic pain; however, 50% of youth scored above clinical cut-off for PTSD symptoms. Program evaluations indicate that all parents and youth reported "agree" or "strongly agree" with the statements: "I believe the program will result in permanent change", "Overall I had a positive reaction to this program". Qualitative responses to open-ended questions were positive. Youth emphasized their appreciation for learning about PTSD. Parents provided constructive feedback regarding scheduling. Six additional families have completed the program and are completing surveys for a total N=10 families; analyses will occur before forum.

Conclusions: Veteran families have been largely overlooked in scientific literature and clinical practice. Spouse and children of Veterans who have mental and physical health issues, can be at risk for developing issues; however, resilience can be fostered to facilitate prevention. This program is a step towards fostering resilience in entire Veteran families.

P108: "Something Most Canadians Don't Understand": A Qualitative Study of Military Children's Perceptions of Parents' Deployment to Morally Injurious Missions

Reeves, Kathryn, BA[1]

[1]*Mount Saint Vincent University*

Introduction: Veterans and active-duty military members have benefited from increased attention over the last decade in post-deployment mental health resulting from traumatic experiences (Richardson et al., 2020). While the traumatic nature of military deployment is well-recognized, the impact of morally injury and potentially morally injurious events is less understood. Moral injury, traditionally defined as an injury to the soul impacting the psychological, spiritual, social spheres of an individual, is frequently explored through the perspectives of medical professionals. However, it is family members who are most likely to notice changes that point to emotional distress. The unique perspectives of children in military families, who often have a unique relationship to the serving member, continue to be neglected in academic literature (Hawkins et al., 2017).

Methods: Participants (n=8) consisted of Canadian adults who grew up in military families, and lived at home during a parent's deployment to a mission where potentially morally injurious events were likely to occur. All participants took part in semi-structured qualitative interviews, lasting between 60 and 90 minutes, to examine their experience of the deployment and associated changes in parents' mental health. Data was analyzed inductively using thematic analysis to derive themes from participants responses.

Results: Thematic analysis of the interviews indicated the presence of four primary themes; contextual factors associated with the parent's deployment, the understanding the child had of the deployment, support available to the child and their family, and the perceived perception of moral injury. Findings were consistent with previous literature, supporting that children in military families face increased difficulties during deployments when they lack the understanding of why they parent is deployed or what consequence they can expect. Additionally, participants who reported noticing changes in parents consistent with moral injury noted the long lasting and intergenerational impact that the injury had on them and their family, extending beyond the direct service member.

Conclusions: Findings indicate that children in military families are able to quickly ascertain changes in parents post-deployment that are consistent with the symptoms of moral injury. This would imply that children in military families are currently an under-utilized resource for post-deployment mental health screenings and follow ups. Furthermore, findings indicate that there is a vital gap in deployment protocols for the Canadian Armed Forces, where children in military families are often unaddressed or unsupported throughout the deployment cycle.

P109: Crisis response approaches for family members of those who serve: A scoping review in progress

Richardson, Melissa, BHSc[1]; Black, Tim, PhD[2]; de Wit, Kerstin, MD[1]; Cramm, Heidi, PhD[1]

[1]*Queen's University; [2]University of Victoria*

Introduction: When critical incidents with military members or public safety personnel occur, psychological supports including critical incident stress debriefing may be available to them. When training accidents or other line of duty death occurs, the broader occupational community can be deeply impacted. It is unclear to what extent psychological supports or crisis programs are offered to families beyond the family

directly experiencing the tragedy. The purpose of this scoping review will be to identify and describe available crisis response programs for family members of those who work in defence and public safety sectors. This will help to inform the development of a crisis response program for family members of military and public safety personnel.

Methods: The procedures for this scoping review follow Arksey and O'Malley's five-step framework, in addition to the consultation step to integrate subject matter experts with knowledge of programs across service elements and sectors. Databases to be searched include CINAHL, MEDLINE, and PsycINFO. Search terms include 'crisis response', 'programs', 'support', 'famil*', 'public safety personnel', and 'military'. Covidence will be used for reference storage, blinded title and abstract screening, full text review and data extraction. The steps in the search will be documented through a PRISMA diagram.

Results: We expect the dataset to include quantitative, qualitative, and mixed methods primary studies describing the peer-reviewed literature associated with crisis response supports for families. Data extraction and evidence synthesis will focus on issues related to program content, mechanisms for delivery, timing and frequency of programming, and indicators of program and support effectiveness. The results will form a critical foundation for program development to respond to an urgent need in Canada for families associated with defense and public safety sectors. Analysis is expected to be complete by early fall 2023.

Conclusions: Families of active duty military and public safety personnel serve alongside their loved ones. When a member of the service is killed, families throughout the occupational community can experience indirect impacts. This study directly responds to a gap identified by the broader community and will inform the development of evidence-based programs and supports for families.

P112: Exploring Family Breakdown and Violence within Military Families: Building better supports through evidence-based mixed-methods research

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[1]Canadian Forces Morale and Welfare Services

Introduction: Family violence is a serious public health concern that can include physical, sexual, emotional and/or financial abuse (Public Health Agency of Canada 2014). Of police-reported violence, one in four individuals experienced violence from a family member (Conroy 2021). While there is ample research on family breakdown and violence within Canadian society, little research exists specifically on the nexus between military families and family breakdown and violence.

This research explores the experiences of military families in relation to family breakdown and/or family violence. Its purpose is to identify the types of services that would be helpful to military families, and specifically the potential gaps in policies and service provision to military families experiencing breakdown or violence. The research results will inform recommendations to adapt or improve policies and services aimed at supporting military families experiencing breakdown or violence.

For this study, the data collection has been completed and interim analysis is underway.

Methods: The research utilizes qualitative and quantitative methods (130 survey responses and 14 semi-structured interviews) with military members, Veterans, and current and/or previous spouses/partners. The research was informed by two literature reviews commissioned by CFMWS/MFS which focused on the barriers, supports and bridges to help-seeking behaviours among military members and their families, and prevention and early intervention programs for intimate partner violence. This research applies a feminist and trauma-informed lens, which guides the thematic content analysis of the interviews and the statistical analysis and data visualisation of the survey data (Microsoft Power BI). Following SAGER Guidelines1 the research outlines the demographics of the study population with regards to gender identity and utilized a self-report method. Where appropriate, data will be disaggregated by gender and gender difference and similarities will be described. The research received approval from the DND/CAF Social Science Research Review Board.

Expected Results: The expected results include insights as to how policies and services can be adapted or improved to better reach and support military families experiencing breakdown or violence; as well as how we can collectively best enhance the sense of military community support for families enduring such experiences.

Conclusions: This work contributes to a growing body of research that considers the unique challenges faced by military members and their families, as well as their lived experiences with family breakdown and violence.

P113: "Dropping in and out": Social media and internet-based communication amongst military families during separation

Abigail, Wood, MSc[1]; Bowser-Angermann, Joanne, EdD[1]; Gray, Leanne, EdD[1]; Fossey, Matt, MSocSc[1]; Gibson, Poppy, EdD[1]; Godier-McBard, Lauren, PhD[1]

[1]Anglia Ruskin University

Introduction: The 'Impact of Service Life on the Military Child: The Overlooked Casualties of Conflict Update and

Review Report' identified a gap in our understanding related to how significant leaps in technology over the past few decades have impacted how UK military families communicate.

Methods: This abstract presents the common findings across two studies exploring how U.K. military families communicate, with a specific interest in social media and internet-based communication. A scoping review of international literature, following Arksey and O'Malley's five-stage framework, identified 11 relevant papers. A mix of virtual and in-person interviews and focus groups were undertaken with the partners of Navy (21) and Royal Air Force (RAF) (10) personnel with children under 21, and Naval (21) and RAF (17) Service children under 21. Both sets of data were analysed via reflexive thematic analysis (Braun and Clarke, 2022).

Results: Both the scoping review and interview data highlight the benefits of social media and internet-based (SM/IBC) communication. Including the unique benefits of face-to-face communication, increased ease, immediacy, and opportunities for communication, and the role SM/IBC played in facilitating separated parents to be more involved in everyday life (e.g., via photos, helping with homework, providing advice, or sharing jokes and memes). However, our findings also highlight a range of practical challenges; variable and unstable wi-fi, competition for access, time difficulties and pressures, communication blackouts, and costs. Families discussed the emotional impact of unstable connections and missed calls, which could lead to anxiety surrounding parental safety and upset for some children. As well as challenges navigating the increased expectation for communication related that the perceived accessibility of SM/IBC. Both partners and children discussed the challenge of choosing what to share and finding the right balance of communication. Some children describing how they choose not to share some experiences with their serving parent as they were aware their parent may be busy, stressed or tired during deployments.

Conclusions: Whilst our findings highlight a range of unique benefits of social media and internet-based communication. It also demonstrates the importance of preparing families for practical and emotional challenges they may face in using social media and internet-based social media. Supporting them to have conversations around they intend to use social media, their expectations for communication. and how they will approach sharing challenges situations at home if they arise.

PRIMARILY PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

1C05: The Intergenerational Transmission of Chronic Pain within Veteran Families: Developing Knowledge Mobilization Efforts to Ensure Findings Reach Veteran Families

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[1]*University of Calgary;* [2]*Chronic Pain Centre of Excellence for Canadian Veterans;* [3]*Sick Kids Hospital*

Introduction: Only one empirical study to date has examined pain in offspring of Veterans. Given this scarcity, there is a critical need to characterize the prevalence of pain in children of Canadian Veterans and the mechanisms underlying intergenerational risk for chronic pain. Our ongoing research is addressing this gap; however, it is imperative that the findings and implications of our research are appropriately shared with veteran families and communities. Therefore, current knowledge mobilization efforts are being created through the development of an accessible video summary, co-developed with patients, family, and community partners.

Methods: Findings from our mixed methods research project exploring intergenerational chronic pain in Veteran families is of focus to mobilize. The quantitative study involved 118 Veteran-child dyads. The qualitative study involved participation of 12 Veteran families (12 Veterans, 17 youth, and 5 spouses). To ensure our main findings reach target audiences including Veteran families, our Veteran family partners were involved at all stages of the project from conception to knowledge mobilization/translation, thus emphasizing integrated knowledge translation approaches. One Veteran family (Veteran, spouse, and two children) was selected to be involved in the filming of an accessible, family-focused video. Filming has been completed. The Public and Patient Engagement Evaluation Tool (PPEET) is in the process of being applied to assess engagement during the knowledge mobilization process.

Results: The quantitative study brought forth main messages regarding the evident chronic pain occurrence in Veteran families: 74.6% of Veterans, 52.2% young adults, and 25.6% of youth. The qualitative study highlighted the importance of understanding military culture and identity within the context of family pain experiences. This highlights the learned thinking/responses to pain and pain management, along with how to build family resiliency to combat mental health concerns. A 3-minute accessible and engaging video will be developed to be shared across diverse platforms including the CIMVHR forum. Preliminary work using the PPEET tool addresses engagement at participant, researcher, and organizational levels.

Conclusions: Our knowledge mobilization efforts emphasize the importance of not only conducting work to support

Veteran families but ensuring that findings reach those who can benefit from the information. Creating tools and outputs that are accessible to families can enhance uptake of knowledge gained by patients and increase Veteran family research/program participation.

Poster Presentations

P106: Effectiveness and engagement in self-education: A mixed methods study for veterans managing chronic pain

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[1]McMaster University

Introduction: Veterans in Canada experience chronic pain at higher rates than the general population, driving the need for effective rehabilitation and pain self-education programs. We are conducting a mixed methods study consisting of 1) a systemic review to examine the effectiveness of pain self-education programs in reducing pain intensity and improving self-efficacy in persons with chronic pain and 2) interviews with veterans about their experiences around effective pain education programs (in progress).

Methods: We systematically searched health databases to identify RCTs that address pain self-education (broadly defined as education and/or self-management), extracting outcomes of pain intensity, disability, self-efficacy, and pain catastrophizing at the first follow-up time point. We categorized the types of interventions found based on a) who created and led; b) who directed the timing and frequency; and c) was the focus on knowledge or action? We then sought feedback from the Veteran Advisory Council of the Chronic Pain Centres of Excellence via a survey: veteran partners identified intervention categories they felt represented their conceptualization of self-education to develop the final inclusion criterion.

Results: Six out of nine Veteran Advisory members participated in our survey. Action-focused pain self-education methods involving some level of healthcare provider involvement were most concordant with veterans' view of self-education. We identified 45 RCTs addressing pain self-management that met the criteria of Veteran Advisory and our inclusion criteria. Of these, nine studies compared two different pain self-education methods (e.g., cognitive behavioural strategies vs. self-management training), and the rest compared self-education to another intervention or control group. 29 studies measured pain intensity, 3 of which resulted in significantly lower pain intensity in pain self-education group compared to other interventions. 14 studies measured self-efficacy, with 6 studies resulting in significantly higher self-efficacy in the pain self-education group. 16 studies measured disability and pain catastrophizing, with 4

interventions resulting in significantly lower disability and pain catastrophizing scores. Group format was the most common mode of delivery for self-education.

Conclusions: Taken together, our results suggest self-education strategies can be effective but may need to incorporate key elements in their delivery to support and engage veterans. We are using the results of our literature review to conduct qualitative interviews with veterans living with chronic pain to understand their experiences with those pain self-education programs identified as most effective. We will combine the results of both parts of the study to propose a model for effective pain self-education for veterans living with chronic pain.

MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

1D02: Co-designing resources related to intimate partner violence with members of the Veteran community

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[1]Atlas Institute for Veterans and Families

Brief Description: Research evidence suggests that intimate partner violence (IPV) is a significant issue in military and Veteran communities (ex: Cowlishaw et al. 2022; Kwan et al. 2020). However, few publicly available resources about IPV address the unique needs and experiences of Veteran Families. To supplement outputs from an ongoing research study that aims to support service providers in responding to IPV among Veterans and their Families, the Atlas Institute collaborated with members of the Veteran community to co-design two educational videos about IPV as well as a list of support resources and services available in Canada.

This presentation will discuss the process of co-designing these resources with Veterans and Veteran Families. In doing so, it will identify some of the key challenges and successes of the co-design methodology, and will highlight implications and opportunities for future related work.

Patient Population: The target audience for the intimate partner violence (IPV)-related resources includes Canadian Veterans and Families of Veterans who have experienced IPV, or who know someone who is experiencing IPV. This presentation is also relevant for researchers who are interested in co-designing resources for Veterans and Veteran Families with members of these communities. The presentation may also interest service providers who are seeking educational and/or support resources for clients experiencing IPV.

Results: The first of the two videos describes the different types of intimate partner violence (IPV) and their potential

impacts. The second video provides information regarding misconceptions about IPV that are unique to military culture and that may prevent someone from seeking support.

Successes of the co-design process to date include resource content that reflects the lived experiences of those in the Veteran community who participated in the project, as well as a sense of authentic engagement experienced by these individuals. Key challenges experienced to date include managing the expectations and contributions of diverse stakeholders and navigating corresponding implications for resource costs, timeline, and contents. All resources will be available on the Atlas Institute website in the summer of 2023.

Conclusions: The outcomes of the co-design process thus far suggest that co-design is an effective methodology for engaging Veterans and Veteran Families authentically in resource development, particularly regarding intimate partner violence. Outcomes to date also suggest opportunities for optimizing multi-stakeholder co-design projects – particularly those that solicit the lived experiences of Veterans and Veteran Families while also integrating contributions from other stakeholders, such as organizational staff and research collaborators.

5D02: How have families figured into research on suicide prevention among police and law enforcement? A scoping review

Leroux, Janette, PhD[1]; DuBois, Denise, PhD[1]; Huctwith, Ashleigh[1]; Potter, Sydney[1]; Gill, Kamaldeep, PhD[1]; Campbell, Margaret, PhD[1]; Cramm, Heidi, PhD[1]

[1]Queen's University

Introduction: Much suicide literature purports the relevance of interpersonal theory to explanations of suicidality. Police and law enforcement personnel are at heightened risk of suicidality. Emergent public safety research suggests an intimate proximity of family with occupational lifestyles and stressors. Our objective was to examine and summarize the range and nature of family involvement in research on suicide prevention among police and law enforcement occupational groups.

Methods: We developed a robust and peer-reviewed search strategy in collaboration with a research librarian. We undertook a scoping review according to the Joanna Briggs Institute methodology and the PRISMA-ScR extension. Using a combination of search terms and subject headings, without date or geography restrictions, we conducted a systematic search of the following six databases for English-language journal articles: CINAHL, MEDLINE, PsycInfo, Web of Science, PTSDpubs, EMBASE. Using MAXQDA, we secondarily performed a qualitative framing analysis of explicit theory and implicit theoretical propositions around family, suicide,

and policing.

Results: From 2743 articles screened, 29 were included. Studies emerged from several countries, were predominantly quantitative cross-sectional designs, and tended to position suicide as consequential to working conditions. Overwhelmingly, family was measured and reported on as dichotomizations of marital status, emotional or social support, family functioning, and work-family conflict. Though included in etiologic explanations of suicidality, theoretical or substantive explanations for the relevance of family to the intersection of policing and suicide were largely absent. Despite this, we found through secondary qualitative analysis that most studies drew upon unstated propositional constructions of family to explain suicidality among police and law enforcement personnel.

Conclusions: Our findings underscore the nebulous presence of family in this subset of public safety suicide prevention research. Future research should attend to theoretical gaps and ontologic assumptions surrounding family, suicide, and policing within existing scholarship. The question of how family could or should intersect with suicide prevention has yet to be asked in other public safety sectors.

5D04: How are families involved in international suicide prevention guidelines? A systematic literature review and narrative synthesis

Leroux, Janette, PhD[1]; DuBois, Denise, PhD[1]; Gardiola, Andrea[1]; Dumlao, Kyla[1]; Gill, Kamaldeep, PhD[1]; Cramm, Heidi, PhD[1]

[1]Queen's University

Introduction: For special populations that may experience heightened vulnerability to suicide, including people working in public safety sectors as well as military and Veteran communities, social-relational interventions on suicide are poorly understood. Some research suggests family members can be important social support in suicide prevention. The aim of this study is to examine and synthesize current suicide prevention policy strategies and guidelines that involve families. Findings will be interpreted and adapted to family contexts of special occupational groups, as part of a broader research partnership between Atlas Institute for Veterans and Veteran Families and Families Matter Research Group.

Methods: We undertook a systematic review and narrative synthesis, according to Joanna Briggs Institute methodology. In collaboration with a research librarian, we developed a rigorous and peer-reviewed search strategy. Using a combination of search terms, subject headings, and keyword searches depending on the available parameters of each database, we systematically searched the following databases: Embase, Cochrane, Medline, PsycInfo, and CINAHL. Searches were restricted to English-language peer-reviewed journal

articles. We adapted the JBI tool for textual data extraction, and used JBI-NOTARI for meta-synthesis. Screening, critical appraisal, and data extraction were performed by two independent reviewers.

Results: From 1478 articles screened, 80 full-text articles were assessed for eligibility. Studies were categorized as: clinical (*N* =47), community intervention/program (*N* =22), or guidelines (*N*=11). Australia was most represented in this literature. Of the studies, two centrally focused on the needs and experiences of families, while the remainder involved families more peripherally, for example as key actors in the delivery of mental health first aid. Consensus methods were largely represented by Delphi, with considerable differences in how families were represented and given voice in study and guideline target populations. In our narrative synthesis, we present family-related statements, a characterization of statements according to the suicide prevention continuum, and map out the recommendations offered for future research and guidelines that feature family roles or relationships.

Conclusions: Global burden of suicide and suicidality creates the imperative to understand and take action to prevent suicide. Our findings suggest that within the scholarly literature base the needs and wisdom of family are obscured in practical and public guidance for suicide prevention. Through our narrative synthesis, as an asset-oriented frame, we bring forward the gaps and areas for development in population-specific contexts.

5E01: Re: Building First Responder Families: Core Model and Program Development

Schwartz, Kelly, PhD[1]; McElheran, Megan, PsyD[2]; Duffy, Hanna, PhD[1]; Redekop, Michelle, MSc[1]

[1]University of Calgary; [2]Wayfound Mental Health

Program/Intervention Description: Given the nature of emergency response occupations, the consequences of operational stress (OS) experienced by first responders (FR) extend beyond the individual service member to spouses and partners who are subject to being negatively affected by the OS, PTSI and/or PTSD of their FR family member. Given the important role that spouses play in providing day-to-day support to FR (Carleton et al., 2019), the *Re: Building FamiliesTM* (RBF) program is an evidence-informed (Schwartz et al., 2022; Harris et al., 2022; Redekop et al., 2022) 6-week psychoeducational and support program designed to enhance the well-being of first responder (police, fire, and paramedic) spouses and families. Facilitated by registered psychologists/ social workers, the RBF program is delivered via a combination of psychoeducational content (e.g., pre-recorded expert videos), workbook activities and reflections, and facilitated live discussion. At the heart of the RBF program are four key elements or themes (i.e., the HOME*TM* Model) that address

foundational areas relevant to life in a first responder family: Honouring culture; open communication; mutual support; and embracing identity.

Evaluation Methods: At the mid-point of our program feasibility study, it is important to measure the impact of the RBF program on the psychosocial functioning and well-being of the first responder partners/spouses. This first paper will present findings from outcome measures and narrative responses collected from participants immediately following each RBF session. Participants will respond to three questions immediately following the RBF session: 1) What did you find most helpful or interesting about the session?; 2) What did you find least helpful about the session?; and 3) Is there anything you think we should changes about this session? The Outcome Rating Scale (ORS; Miller & Duncan, 2000) will be used to assess individual, interpersonal, and social functioning in the week prior to the session, and the Session Rating Scale (SRS; Miller & Duncan, 2000) will be used to rate each session by way of relationships, goals and topics, and approaches or methods.

Results: The RBF program will be delivered virtually to mixed groups of 6-8 police, fire, and paramedic spouses/partners in four provinces: BC, AB, SK, and ON. Results of the ORS and SRS will be analyzed across the four HOME themes, and narrative analysis will contrast and compare qualitative responses related to the HOME material.

Conclusions: Affirmations of content validity by first responder family members allows for more rigorous assessment of program efficacy. These findings will be presented in Paper 2.

5E02: Evaluating the Re: Building Families Program at Pre/Post/3-Month Follow-up: Implications for First Responder Families

Duffy, Hanna, PhD[1]; Schwartz, Kelly, PhD[1]; McElheran, Megan, PsyD[2]; Burk, Kassandra, BA[1]

[1]University of Calgary; [2]Wayfound Mental Health

Program/Intervention Description: The 6-week psychoeducational and support Re: Building FamiliesTM (RBF) program is designed to enhance the mental health and well-being and family functioning of first responder spouses and families. This paper will provide results from the first cohorts of participants (n = 70) including changes in social and familial functioning of first responders and first responder spouses.

Evaluation Methods: Evaluative data for the RBF program is collected at 3 time points (i.e., pre-program, post-program, and 3-month follow-up) and includes a range of self-reported psychosocial and family functioning measures from both the first responder and the spouse. The program evaluation focuses on comparing data for individual participants across

the three time points. The primarily evaluative goal is to determine the influence of participation in the RBF program on the psychosocial functioning and well-being of the first responder partner/spouse, and how this functioning translates to family functioning.

Results: A quasi-experimental design (pre/post-test) evaluates the impact of the 6-week RBF program across several variables, including operational stress, mental health (e.g., anxiety and depression), family functioning and satisfaction, quality of life, resilience, and burnout. Multilevel modeling (MLM) will be used to examine the psychosocial and psychological functioning of participants completing the program between Winter, 2023 and Fall, 2023 (estimated n = 70) across the 3 time points (pre/post/3-month follow-up), and how this functioning is influenced by participation in the program. It is expected that the psychoeducation and support programming received by spouses/partners over the course of the 6-week program will result in measurable and significant changes across the three measurement periods for partners and first responders in the areas of personal mental health (e.g., stress, burnout risk), quality of life, perceived social support, and family functioning (e.g., communication, problem solving).

Conclusions: Evaluating the methodology and results of the RBF program is the first step in developing an evidence-informed manualized intervention program for spouses and families of first responders. It is anticipated that the results of this program evaluation and the development of an evidence-informed psychoeducational and support program for first responder spouses and families will contribute to changing the landscape of available mental health supports and resources for first responder families, and ultimately translated and applied to families representing other emergency (e.g., hospital, urgent care) and public safety (e.g., military, Veteran) populations across Canada.

5E03: Clinical Reflections on the Re: Building Families Program: Using Qualitative Data to Validate Core Content and Delivery Feasibility

McElheran, Megan, PsyD[1]; Duffy, Hanna, PhD[2]; Schwartz, Kelly, PhD[2]; Harris, Daranne, MDiv[2]; Stelnicki, Andrea, PhD[3]

[1]Wayfound Mental Health; [2]University of Calgary; [3]High Point Psychology

Program/Intervention Description: The effects of Posttraumatic Stress Injuries (PTSI's) and Operational Stress Injuries (OSI's) are magnified by the reality that many first responders are spouses and caregivers to family members who vicariously experience the effects of operational stress in the home. Qualitative reports from first responder members (Schwartz et al., 2022) indicate that the effects of such trauma on themselves and their families include psychological

(e.g., fear, anxiety, anger) and relational harm (e.g., marital breakdown, relationship dissolution with children). The final paper will report on focus group results with participants who completed the 6-week RBF program and the implications for practitioners delivering interventions to first responders and their families.

Evaluation Methods: This paper will present on focus group results with participants who completed the 6-week RBF program and the implications for practitioners working with first responders and their families. It is anticipated that approximately 70 spouses/partners of first responders will have completed the RBF program by early Fall, 2023. Following completion of the program, focus group participants (*n* = approx. 25) will be asked semi-structured questions related to: Their general experience(s) of the RBF program, what parts they found most/least helpful, their experiences of attitudinal and behavioural change, and their peer interaction experiences. Two members of the research team, who are not involved in the delivery of the RBF program, will moderate each conversation. Focus group conversations will be recorded and transcribed. Transcript-based analysis alongside field notes of the moderators will employ the constant-comparative analysis (Glaser & Strauss, 1967) through a process of open-coding and mapping of themes and subthemes.

Results: The collected focus group data serve to catalyze the observable patterns of human experience and the ways in which the program supports family first responder functioning across the four HOME Model domains – Honouring Culture, Open Communication, Mutual Support, and Embracing Identity. The results will contribute to validation of a comprehensive understanding of the strengths and limitations of the RBF program.

Conclusions: The RBF program seeks to alleviate the effects of operational stressors that accompany the role of first responders for both the first responder member and their family. Post-program data will serve to validate the manualized content and structure of the RBF and inform development of a scalable product that is deliverable to first responder families in varied clinical and community setting beyond this research study.

6D02: Wellbeing Indicators of Young Children from Australian Military and Veteran Families: Insights from Parents

Bhullar, Navjot, PhD[1]; Rogers, Marg, PhD[2]

[1]Edith Cowan University; [2]University of New England

Introduction: A fifth of Australian households have a military or veteran member. Many of these households are affected by the stresses of military family life, including frequent and prolonged parental deployments and training away from the family home,

and frequent relocations. Additionally, some parents have service-related physical and mental health conditions or moral injury which impact the whole family. Understanding the impacts of these unique stressors on young children is important to inform an evidence base for resilience programs for children from military families.

Methods: This study provides an account of defence parents' perceptions of their young children's (2-8 years) social and emotional wellbeing. A survey comprising quantitative measures and open-ended questions to understand their children's wellbeing outcomes was used. Over 200 civilian parent partners registered to participate, but only 41 completed the survey due to the pandemic.

Results: Forty-one female partners provided data, 97.6% with a currently serving ADF family member. Results suggested that parental perceptions were positive in terms of their child's wellbeing: keeps going each day (58.5%); keeps interested in things (65.9%); like challenges (36.6%); strives to reach their goals (48.8%); adapts easily to new situations (34.1%); enjoys being with other people (73.2%); enjoys being their friends (87.8%); seeks out activities that make them happy (80.5%); willing to share their positive emotions with others (76.9%); and willing to share their negative emotions with others (24.4%). Significantly, more than half of the parents (61%) were not confident in their ability to help their children cope with parental deployment, family transitions, frequent relocations or other stressors in military families.

The parents' anecdotes provided further insight into their children's struggles with relocations and parental absence and their challenges in supporting them. The parents reported having little access to effective age and culturally appropriate resources to support their children with the stresses of military family life.

Conclusions: Overall, our findings suggest that, on average about 50% of the parents reported that their children were not coping well, and over half of the parents reported that they did not feel confident in supporting their child through the unique stressors of military families. This showed a need for freely available, easily accessible, research-based Australian resources to support young children of military and veteran families, which led to the co-design and co-creation of our Children's Family Resilience Programs, formerly Early Childhood Defence Programs (ECDP).

7E04: Exploring the experiences and needs of care partners of older Veterans transitioning into a long-term care home.

Stewart, Georgia, BHSc[1]*; Robitaille, Annie, PhD*[1, 2]

[1]*University of Ottawa*

Introduction: Family care partners of Veterans represent a unique demographic, as their loved ones require specific care needs that might differ from the general population. Supporting Veterans at home can often be challenging for care partners, resulting in impacts on their own health and well-being. It becomes even more difficult when Veterans needs are no longer able to be met at home, and the tough decision to move into a long-term care home must be made. There is a paucity of research on care partners of Veterans moving into long-term care. Understanding this, often final, transition will allow for the improvement of care and support throughout this process, for both care partners and Veterans. The objective of this study was to (1) explore the experiences and identify the needs of care partners of older Veterans through the transition of their loved one moving into a long-term care home and (2) investigate whether there are differences in the experiences of care partners of older Veterans transitioning into a long-term care home with contract beds for Veterans compared to a home without.

Methods: A descriptive qualitative design was used as the methodology for this study. Data collection is currently underway. This study specifically involves care partners of older Veterans that have moved into long-term care within the past year. Purposive sampling was used to recruit these participants across Canada from homes with contract beds for Veterans and those without. Semi-structured interviews are being conducted virtually and are focusing on the experiences and needs of care partners throughout the move from the community to long-term care, guided by the determinants of health model. Once interviews are completed, thematic analysis will be conducted on the data.

Results: The final outcomes of this study will highlight the specific needs and experiences of care partners of older Veterans transitioning into a long-term care home. It is expected that these will differ from the general population. Therefore, providing valuable insight into ways in which the health and well-being of both care partners and Veterans can be improved.

Conclusions: The results of this study will contribute to a better understanding of the transition to long-term care and offer a more comprehensive picture of the journey lived by older Canadian Veterans and their families.

Poster Presentations

P111: Supporting children and families during transition from military to civilian life: Co-designing and co-creating research-based resources

Rogers, Marg, PhD[1, 2]

[1]*University of New England;* [2]*Manna Institute*

Introduction: Transitioning from service to civilian life is challenging for service members and their families. Between 5500-6500, service members leave the Australian Defence Forces each year, and most families plan to leave their roles well in advance. Partners and children are particularly

vulnerable to spikes in stress due to changes in identity, economic challenges, employment, education, family role variation, relocation, access to medical and mental health care, and organisational support for the member. Members and their families must also navigate multiple challenging systems featuring duplication and excessive delays. The mental and physical health of the member might mean added caring roles. Partners and children are also vulnerable to the visceral transference of mental health conditions. While 80% of veterans navigate the transition without serious problems, 20% find it very difficult, and their families are entwined in the difficulties. The 20% with problems risk serious mental health issues, including suicide.

Methods: We co-designed and co-created free, research-based online modules to support partners and family members to utilise their strengths and build protective factors around their families before transition. Stakeholders who contributed to the module included a veteran family worker, veterans, veteran partners, adult children of veterans, psychology and defence family researchers, early childhood consultants, family support researchers, an education behavioural specialist and an ex-service organisation worker. The stakeholders' lived experiences were woven with literature and theories, then translated into everyday language for parents. Then, the module was adapted for educators using educational philosophies and for support workers using strengths-based, resilience-based approaches.

Results: The multimedia learning modules provide topics for partners and members to discuss, ideas to support their children, ways to communicate the family changes with educators and tips for engaging organisation mentors and advocates. The stakeholders identified the need to co-create another module about 'Child and Family Trauma' during this research process. The modules are part of the Children's Family Resilience Programs (formerly Early Childhood Defence Programs), containing free, research-based resources for children, parents, educators and support workers.

Conclusions: Research translation is a complex process, but involving those with lived experience ensures co-created research-based resources are relevant to the needs of the end users. Including support workers in the co-design and co-creation process enhances the links between lived experience, theories and practice. This will interest those who support military, veteran and first responder families as the resources can be freely used and adapted under a Creative Commons Licence.

PUBLIC SAFETY PERSONNEL / PERSONNEL DE LA SÉCURITÉ PUBLIQUE

HEALTH SERVICES

Poster Presentations

P122: Leveraging App Technology to Support Mental Wellness of Police Personnel - An Implementation Evaluation

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[1]*Ontario Shores Centre for Mental Health Sciences;* [2]*University of Ontario Institute of Technology;* [3]*Memorial University of Newfoundland*

Introduction: Public safety personnel, including law enforcement staff, are at higher risk for developing an occupational stress injury. Effective treatment options are available but barriers to help-seeking exist such as stigma, fears regarding confidentiality, and worry about impact on career. Additional barriers to care exist such as scheduling issues, limited local resources, and lack of specialized service providers. In an effort to address these barriers, we partnered with our local police service and used technology – a smartphone app – to build a unique mental health support resource. In this presentation, we report on our implementation plan and focus group outcomes from the app evaluation.

Methods: Our project started with a survey and focus groups to better understand the unique needs, help-seeking behaviours, and technology preferences of the intended audience. Next, we worked with students and academics to build the app. We also collaborated with the Public Services Health and Safety Association to connect the project to broader provincial workplace wellness initiatives. After a prototype was built, members of the police services' peer support team were consulted to provide feedback before the first version of the app was released to the entire service in 2021. In the following year, we conducted several additional focus groups. The app was again revised based on this feedback and a final version was launched in 2022.

Results: The results from the post-launch focus groups are divided into: concerns related to impressions of the launch and our communication strategy, the technology, and the content of the app. We discovered many civilians assumed the app was not designed for them, people had concerns about it being on their personal phones, and learning about it during parade would have been the most helpful. With regard to the technology, they really liked the simplicity of the app—describing the app as simple, straightforward, and easy to use. They were nervous about pressing certain buttons and suggested that being able to chat with a clinician through the app may be desirable. Members stated, once seeing the content of the app, their concern with confidentiality was alleviated, they trusted the content, and agreed that the content was appropriate for a law enforcement audience.

Conclusions: Overall, our evaluation of the implementation of the app is useful to consider for other groups intending to use a similar technology to provide mental health support. Future research about the sustainability and ongoing use is desired.

P125: From Research to Training: Impact of COVID-19 on the Mental Health of Healthcare Workers and Public Safety Personnel

Remers, Shannon, MSc[1,2]***;*** *Primiano, Sandra, PhD,PsyD*[1]*; O'Connor, Charlene, MA/MSc*[1,2]*; Ritchie, Kimberly, PhD*[2,3]*; Kotick, Rhonda, MSW*[1]*; McKinnon, Margaret, Phd,PsyD*[2,3]*; Moll, Sandra, PhD*[3]

[1]*Homewood Health Inc;* [2]*Homewood Research Institute;* [3]*McMaster University*

Program/Intervention Description: Healthcare workers, public safety personnel and essential workers may have experienced considerable psychological distress as a result of the COVID-19 pandemic due to providing direct patient care, vicarious trauma, quarantine or self isolation (Wu et al., 2020). Cultural Competency training and Peer support can be an approach used to support those who cared for Canadians through the pandemic. Research that captured some of the HCW and PSP COVID-19 experience was used to develop and deploy Cultural Competency training and Peer Support training and services for these individuals. Moral injury was a competency captured in both of the trainings as well as an additional training specifically on moral injury was developed and deployed to support the heightened need in this area.

Evaluation Methods: Homewood participated in creating a recruitment, screening, training and ongoing education to support for healthcare workers, public safety personnel, peer support workers as well as potential organizations.

To evaluate the trainings, participants were asked to complete a survey pre and post training that evaluated their level of knowledge, competency and importance for each of the cultural competencies and peer support competencies that were identified from the project and reviewed in the training.

Results: Pre/post survey data revealed, in both trainings, statistically significant increases in perceived knowledge, competency, and importance in all competencies. The cultural competency of moral injury improved the most, followed by self-compassion and organizational/operational factors. For the peer support competencies mental health and substance abuse competencies improved the most followed by burnout, compassion fatigue and vicarious trauma.

Conclusions: A cultural competency training and peer support competency training have allowed healthcare workers and public safety personnel to process their own experience, provided an understanding of what they have been through,

connected the organization and frontline to help bridge that gap, and helped inform staff of areas that might be concerns for their clients.

PRIMARILY MENTAL HEALTH AND WELL-BEING

Podium Presentations

1E01: The Royal Canadian Mounted Police Study: Protocol for a prospective investigation of mental health risk and resilience factors

Carleton, R. Nicholas, Phd[1,2]*;* *Krätzig, Gregory P., PhD*[1]*; Sauer-Zavala, Shannon, PhD*[3]*; Neary, Patrick J., PhD*[1,2]*; Lix, Lisa M., PhD*[4]*; Fletcher, Amber J., PhD*[1]*; Afifi, Traci O., PhD*[4]*; Brunet, Alain, PhD*[5]*; Martin, Ron, PhD*[1]*; Hamelin, Karen S.*[9]*; Teckchandani, Taylor A., MSc*[2]*; Jamshidi, Laleh, PhD*[1]*; Maguire, Kirby Q., BA Hons.*[1,2]*; Gerhard, David, PhD*[4]*; McCarron, Michelle, PhD*[1]*; Hoeber, Orland, PhD*[1]*; Jones, Nicholas A., PhD*[1]*; Stewart, Sherry H., PhD*[6]*; Keane, Terence M., PhD*[7]*; Sareen, Jitender, MD*[4]*; Dobson, Keith, PhD*[8]*; Asmundson, Gordon J.G., PhD*[1]

[1]*University of Regina;* [2]*Canadian Institute for Public Safety Research and Treatment;* [3]*University of Kentucky;* [4]*University of Manitoba;* [5]*McGill University;* [6]*Dalhousie University;* [7]*Boston University;* [8]*University of Calgary;* [9]*RCMP Training Academy*

Introduction: Royal Canadian Mounted Police (RCMP) report frequent and substantial exposures to potentially psychologically traumatic events (Carleton et al., 2019), which greatly increase their risk of posttraumatic stress injuries (PTSIs). Approximately half of serving RCMP evidence a substantial PTSIs, such as screening positive for at least one current mental health disorder at any given time (Carleton et al., 2016). Despite commitments to support RCMP mental health, there remains little extant research on the aetiology or development of PTSIs relative to the general public. The RCMP Study is a globally unprecedented longitudinal research project designed to assess environmental factors and individual differences associated with PTSIs by following newly recruited RCMP cadets from their entry into the cadet training program, and then during their service career up to five years post-deployment.

The RCMP Study is also designed to collect data on the impacts of the current cadet training program related to an augmented program that includes a proactive intervention designed to mitigate PTSI, called Emotional Resilience Skills Training (ERST). The data collected from the current cadet training program has provided important information that can inform contemporary discussions regarding the mental health of RCMP, other public safety personnel, and all those who serve.

Methods: The RCMP Study combines data collected across a wide-ranging scope of assessment methods, including self-report mental health symptom measures, structured clinical interviews, and biometric data to develop a holistic system for the detailed monitoring of RCMP member mental and physical health throughout training and active service. Many mental health symptom and biometric measures are collected by participants daily, and accessible to the individual participant through cumulative reports, in order to facilitate self-monitoring of changes in their mental and physical health.

Results: The presentation will describe the study design, hypotheses, and measurement modalities. The presentation will also provide updates including recruitment status, opportunities for iterative research design improvements, available results, and future directions. The study infrastructure and interventions are scalable for all RCMP and, ultimately, all public safety personnel.

Conclusions: All participants are expected to benefit from early identification of mental health injuries, their own capacity to intervene in support of good mental health, and stigma reductions caused by making mental health monitoring commonplace. The presentation will provide nuanced updates regarding the RCMP protocol and the current state.

1E02: Mental health of Royal Canadian Mounted Police at the start of the cadet training program

Carleton, R. Nicholas, PhD[1,2]*; Jamshidi, Laleh, PhD*[1,2]*; **Maguire, Kirby Q., BA Hons.**[1,2]*; Lix, Lisa M., PhD*[3]*; Stewart, Sherry H., PhD*[4]*; Afifi, Traci O., PhD*[3]*; Sareen, Jitender, MD*[3]*; Andrews, Katie L., PhD*[1,2]*; Jones, Nicholas A., PhD*[1]*; Nisbet, Jolan, PhD*[1,2]*; Sauer-Zavala, Shannon, PhD*[5]*; Neary, Patrick J., PhD*[1,2]*; Brunet, Alain, PhD*[6]*; Krätzig, Gregory P., PhD*[1]*; Fletcher, Amber J., PhD*[1]*; Teckchandani, Taylor A., MSc*[2]*; Keane, Terence M., PhD*[7]*; Asmundson, Gordon J.G., PhD*[1]

[1]*University of Regina;* [2]*Canadian Institute for Public Safety Research and Treatment;* [3]*University of Manitoba;* [4]*Dalhousie University;* [5]*University of Kentucky;* [6]*McGill University;* [7]*Boston University*

Introduction: Previous research indicates that approximately half of serving Royal Canadian Mounted Police (RCMP) screen positive for at least one current mental health disorder at any given time. In order to understand the development of mental health challenges faced by serving RCMP members, and act on commitments to provide effective proactive interventions, baseline assessments of cadet mental health must be obtained. The current objectives study were to 1) provide estimates of the mental health of newly recruited RCMP cadets; 2) assess for associations with demographic variables; and 3) provide comparisons with the general public, as well as serving RCMP members.

Methods: Participants were RCMP cadets (n = 1696) beginning the standard cadet training program, invited to

complete self-report survey assessments and be administered the structured Mini International Neuropsychiatric Interview. Most participants completed the survey (96.4%; n = 772), the clinical interview (91.9%; n = 736), or both (88.3%; n = 707). 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: Female cadets self-reported higher symptom scores than males on PTSD, MDD, GAD, and SAD; but lower scores on assessments of AUD (all ps < 0.01). As such, females were also more likely to screen positive for MDD, GAD, and SAD based on self-report measures (all ps < .05), and less likely to screen positive for AUD based on clinical interview data (p < .05). Overall, newly recruited RCMP cadets self-reported symptoms consistent with a positive mental health disorder screen (15.1%) slightly higher than the general public (10.1%; p < .05); including GAD, MDD (ps < .001), and PTSD (p < .05). However, cadets were significantly less likely to report a past mental health diagnosis (3.9%) relative to expected prevalence rates in the general public (33.1%; p <.001). Compared to serving RCMP members, cadets self-reported lower symptom scores and fewer positive screens on all measures available (PTSD, MDD, GAD, SAD, PD, AUD; all ps <.001).

Conclusions: The current results help fill important gaps in the literature, suggesting RCMP cadets have mental health comparable to the general public; accordingly, subsequent mental health challenges may be related to their service experiences.

1E03: Potentially Psychologically Traumatic Event Histories of New Royal Canadian Mounted Police Cadets

Andrews, Katie L., PhD[1]; Jamshidi, Laleh, PhD[1]; Nisbet, Jolan, PhD[1]; Brunet, Alain, PhD[2]; Afifi, Tracie O., PhD[3]; Asmundson, Gordan J. G., PhD[4]; Fletcher, Amber J., PhD[4]; Maguire, Kirby Q., BA(Hons)[1]; Teckchandani, Taylor A., MSc[1]; Lix, Lisa M., PhD[3]; Sauer-Zavala, Shannon, PhD[5]; Sareen, Jitender, MD[3]; Keane, Terence M., PhD[6]; Neary, J. Patrick, PhD[4]; Carleton, R. Nicholas, PhD[1]

[1]Canadian Institute for Public Safety Research and Treatment; [2]McGill University; [3]University of Manitoba; [4]University of Regina; [5]University of Kentucky; [6]Boston University

Introduction: Royal Canadian Mounted Police (RCMP) report extremely frequent and varied exposures to potentially psychologically traumatic events (PPTEs). While occupational exposures to PPTEs may be one explanation for the symptoms of mental disorders prevalent among serving RCMP, exposures occurring prior to service may also play a role. The objective of the current study was to provide estimates of lifetime PPTE exposures among RCMP cadets in training and assess for associations with mental disorders or sociodemographic variables.

Methods: RCMP cadets (n = 772; 72.0% male) beginning the Cadet Training Program (CTP) completed a survey assessing self-reported PPTE exposures and symptoms of mental health disorders. Binomial tests were conducted to compare the current results to previously collected data from the general population, a diverse sample of public safety personnel (PSP) and serving RCMP.

Results: Cadets reported statistically significantly fewer PPTE exposures for all PPTE types than serving RCMP (all p's <0.001) and PSP (all p's < 0.001) but more PPTE exposures for all PPTE types than the general population (all p's < 0.001). Cadets also endorsed fewer PPTE types (6.00 ± 4.47) than serving RCMP (11.64 ± 3.40; p < 0.001) and other PSP (11.08 ± 3.23) but more types than the general population (2.31 ± 2.33; p < 0.001). Participants who reported being exposed to any PPTE type reported the exposures occurred 1–5 times (29.1% of participants), 6–10 times (18.3%) or 10 + times (43.1%) before starting the CTP. There were associations between PPTE types and increased odds of screening positive for post-traumatic stress disorder (PTSD), major depressive disorder (MDD), generalized anxiety disorder (GAD) and social anxiety disorder (SAD) (all p's < 0.05). Serious transport accident (11.1%), physical assault (9.5%) and sudden accidental death (8.4%) were the PPTEs most identified as the worst event, and all were associated with positive screens for one or more mental disorders.

Conclusions: The current results provide the first information describing PPTE histories of cadets, evidencing exposure frequencies and types much higher than the general population. PPTE exposures may have contributed to the cadet's vocational choices. The current results support the growing evidence that PPTEs can be associated with diverse mental disorders; however, the results also suggest cadets may be uncommonly resilient, based on how few screened positive for mental disorders, despite reporting higher frequencies of PPTE exposures prior to CTP than the general population.

1E04: Suicidal Ideation, Planning, and Attempts Among new Royal Canadian Mounted Police Cadets

Nisbet, Jolan, Ph.D.[1,2]; Jamshidi, Laleh, PhD[1,2]; Maguire, Kirby, BA[1,2]; Afifi, Tracie, PhD[3]; Brunet, Alain, PhD[4]; Fletcher, Amber, PhD[2]; Asmundson, Gordon, PhD[2]; Sareen, Jitender, MD[3]; Shields, Robyn, MA[1,2]; Andrews, Katie, PhD[1,2]; Sauer-Zavala, Shannon, PhD[5]; Neary, Patrick, PhD[2]; Lix, Lisa, PhD[3]; Stewart, Sherry, PhD[6]; Krätzig, Gregory, PhD[2]; Carleton, R. Nicholas, PhD[1,2]

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Introduction: Royal Canadian Mounted Police (RCMP) report diverse occupational stressors and repeated exposures to potentially psychologically traumatic events, which may increase the odds of screening positive for a mental disorder, and increase the risk of death by suicide. The current study was designed to provide prevalence information regarding suicidal thoughts and behaviours (i.e., ideation, planning, attempts) and assess for sociodemographic differences among cadets at the start of the RCMP Cadet Training Program (CTP).

Methods: 736 cadets (74% male) were administered the structured Mini International Neuropsychiatric Interview which included an assessment of past-month suicidal thoughts and behaviours as well as lifetime suicide attempts. Of these participants, 699 cadets also completed a full survey that included self-reported demographic data, such as age, gender, sex, education, marital status, and province of residence.

Results: Within 1 month of starting the CTP, a small percentage of cadets reported past month suicidal ideation (1.6%) and no cadets reported any suicidal planning (0%) or attempts (0%). Lifetime suicide attempts were reported by (1.5%) of cadets.

Conclusions: The current results provide the first information describing the prevalence of suicidal ideation, planning, and attempts among RCMP cadets starting the CTP. The estimates of suicidal behaviours appear lower than the general population and lower than reports from serving RCMP. Higher prevalence estimates of suicidal behaviours reported by serving RCMP, relative to lower estimates among cadets starting the CTP in the current study, may be related to age, cumulative experiences or protracted exposures to operational and organizational stressors, rather than insufficient screening of recruits.

2D02: Functional Disconnection and Functional Reconnection: Balancing Work and Home for Public Safety Personnel

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Brief Description: This presentation will serve to provide updated information regarding the Functional Disconnection and Reconnection model that was originally proposed by McElheran & Stelnicki (2021), and which formed a content area of the Before Operational Stress program. This framework teaches public safety personnel strategies to employ to facilitate greater emotional disconnection, particularly during periods of critical incident exposure to potentially psychologically traumatic workplace events. It further teaches public safety members activities in which they can engage to facilitate functional reconnection, which is focused on supporting awareness and processing of emotional experiences related to organizational and occupational stressors. The intent is to support public safety personnel to develop a greater sense of personal agency when confronted with challenging workplace experiences by identifying and teaching different emotional and cognitive coping strategies, beyond engagement in emotional disconnection behaviors.

Patient Population: The primary population for this presentation will be currently serving members of public safety organizations and leaders of same. Active duty military members would also benefit from this presentation, as would family members.

Results: The primary result we have observed since the original presentation of the functional disconnection and reconnection model has been participants greater sense of personal agency when managing operational and organizational stressors. The intent has been to enhance participants sense of empowerment when confronted with workplace stressors versus perceiving that their only option is to absorb and contain stress exposure without being able to take actions to address the stressors they have encountered.

Conclusions: The conceptual framework titled "Functional Disconnection and Functional Reconnection in Public Safety Personnel" was originally proposed to provide an alternative to misapplied principles from stoic philosophy for public safety personnel, which historically has prioritized engagement in coping strategies that have influenced habitual patterns of emotional avoidance and disengagement. The intention behind the model was to provide a novel framework for public safety personnel to consider as a means of enhancing intentional disconnection from emotional difficulties at the time of exposure to a critical incident or potentially psychologically traumatic event, to enhance confidence in the public safety members ability to function at the scene of such an event (functional disconnection). Similarly, the functional connection component of the model presented a more active approach public safety members can take when not at the scene of critical incidents, perhaps when transitioning back to family or home life.

2D03: The impact of public safety personnel´s role on their families and interpersonal relationships during the COVID-19 pandemic

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Introduction: Interpersonal relationships encompass emotional and social interactions with colleagues, family, friends, and one's community and have been determined to positively influence mental health. Throughout the COVID-19 pandemic, PSP and their families were exposed to unique challenges – such as isolation and stigmatization – that impacted these relationships. Previous research has contributed to our understanding of how PSP's role impacts their families and interpersonal relationships; however, there is a scarcity of research on how the pandemic has exacerbated and/or added to these challenges. This study aims to identify how PSPs' roles impacted their families and interpersonal relationships during the COVID-19 pandemic, as well as understand PSPs' perception of how these impacts influenced their mental health and wellbeing.

Methods: This study is part of a larger research project reviewing the mental health and experiences of Canadian PSP during the COVID-19 pandemic. PSP across Canada were invited to participate in a virtual interview which included questions regarding the impact of COVID-19 on their personal lives, relationships (i.e., colleagues, friends, media), and the impact of their role on their families. Participants that provided responses to questions regarding family, friends, colleagues, and the public/media will be included in this study. An inductive thematic approach will be used to identify key themes and subthemes from these data segments.

Results: Data analysis is ongoing and will be completed prior to the conference poster submission deadline.

Conclusions: This study will contribute further insights into PSP's perspectives on the impacts of their role on their families and interpersonal relationships during the pandemic, as well as inform interventions to address the interruption of crucial social supports. Organizations and policymakers should be aware of the impacts that workplace conditions had on PSPs' support systems and the extended impact on the wellbeing of families of PSP during the pandemic.

2D05: Implementing Peer Support Apps in Correctional Services: Lessons Learned and Future Directions

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[1]*Memorial University of Newfoundland;* [2]*University of Western Ontario;* [3]*Wilfred Laurier University;* [4]*University of Regina;* [5]*Mc-Master University*

Introduction: Applications (Apps) intending to connect peer support providers to peers seeking support have grown in popularity in recent years. In 2022, the Public Health Agency of Canada and the Canadian Institute of Health Research funded a project to build, implement, and evaluate a peer support app for providers (PeerOnCallSupport) and an app for support seekers (PeerOnCall). In the current presentation, we focus on implementation of the apps in the correctional services sector, including provincial correctional services in the provinces of Alberta, Newfoundland and Labrador, and New Brunswick and across the 43 penitentiaries currently operated by Correctional Services Canada.

Methods: Implementation of the app included securing support from senior leadership, interviewing organizational champions at each site, customizing content and resources for each organization, training and orienting peer support providers on the app, and then launching the app with frontline employees. In the current study, we draw on our implementation experiences, first with recruiting organizations and then with supporting the creation of a peer support program in two of the services. Next, we speak to the experience of 'onboarding' organizations, including training peer supporters and peers on how to use the apps. In two provinces, this included simultaneously launching a peer support program as none existed prior. Additional data sources include interviews with the champions of the app/peer support program (one per prison in which the app was launched) and data collected on app utilization and surveys with app users.

Results: Study findings highlighted unique opportunities and challenges inherent to the needs and structures of the diverse correctional services. Some of the challenges relate to the organizational culture, including political realities and pressures affecting interest in app use/implementation/uptake. Other challenges were technology related, such as firewalls interfering with app access, lack of access to phones in the prisons, and ensuring security of data. Another group of challenges relates to training officers on how to use the app and resolving concerns about confidentiality, anonymity, shift work, and inability to volunteer hours outside of work for peer support.

Conclusions: Much can be learned about implementing across federal and provincial prison services, that can inform app development and implementation across public safety groups—specifically those in correctional services. Additional insight about how the apps and peer support service are utilized will help guide recommendations for optimizing implementation and impact. There is a need for additional research on how to encourage greater participation for PSP populations in peer support programs.

2E02: A Collaborative Approach to Develop a Cultural Competency Model to Address the Mental Health Needs of Healthcare Providers and Public Safety Personnel

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Introduction: During the COVID-19 pandemic, healthcare providers (HCP) and public safety personnel (PSP) were uniquely impacted as they faced many new situations on the frontlines, such as being at a high risk for contracting COVID-19 and potentially transmitting it to loved ones, rapidly changing protocols that govern work practices, and increased tensions among colleagues regarding vaccination and masking. These situations have taken a toll on the mental health of HCP and PSP, who now are leaving their jobs due to poor mental health, including depression, burnout, PTSD, and moral injury. Adequately addressing the mental health of our HCP and PSP requires both an understanding of their shared experiences on the frontlines and the impact of these experiences on their mental health. The purpose of this study was to understand the mental health impacts of COVID-19 on HCP and PSP and to rapidly translate that knowledge into a competency model that could be used to inform mental health treatment programming.

Methods: Data collection included an online anonymous survey and a virtual semi-structured interviews with HCP from April 2021 until September 2022. Thematic analysis was used to analyze interview data and descriptive statistics were used for survey data. In collaboration with a mental health hospital, interviews and survey data were used to develop a cultural competency matrix according to Marrelli's et al., (2005) 6-step competency modelling approach. The cultural competency matrix acknowledged the unique shared experiences of HCP and PSP during the pandemic as a culture, and included domains and their corresponding competencies (awareness, knowledge, and skills) from these data. Clinical experts from the mental health hospital provided further refinement and applicability of the cultural competency model.

Results: A total of 92 interviews and 700 surveys were completed by HCP and PSP from across Canada. Participants included diversity among both HCP and PSP occupations (e.g., HCP; nurses, physicians, respiratory therapists. PSP; police officers, firefighters, paramedics). Five domains were identified from the data and used to inform the cultural competency model: moral injury, coping and self-compassion, exhaustion and burnout, family, and organization.

Conclusions: The reported experiences of HCP and PSP highlight the many shared challenges these occupations endured during the pandemic. Results from this study can be used to develop a continuing education training program to educate mental health professionals who are caring for HCP and PSP who have been negatively impacted by the pandemic.

2E03: From A to Z: Creating a Glossary of Terms on Post-Traumatic Stress Disorder to Define the Language we use to Help Others

Testa, Valerie, MSc[1]; Carleton, R. Nicholas, PhD[2]; Groll, Dianne, PhD[3]; Ritchie, Kimberly, PhD[4]; Tam-Seto, Linna, PhD[4]; Mulligan, Ashlee, MSc[5]; Sullo, Emily, MMASc[4]; Schick, Amber, MA[6]; Bose, Elizabeth, MSc[7]; Heber, Alexandra, MD[7,8,4]

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Brief Description: The Federal Framework on Post-Traumatic Stress Disorder (PTSD) Act was introduced to address the increased risk of PTSD and need for direct and timely access to PTSD support for public safety personnel, military, and Veterans. Early on, the need for a glossary of terms around psychological trauma to increase understanding and mobilize knowledge about the nature of PTSD became clear. The first iteration was created in 2019 to support open discourse at the National Conference on PTSD and assist in developing the Federal Framework on PTSD. The COVID-19 pandemic has increased our reliance on members within essential professions, including healthcare professionals. At the same time, the pandemic has taken a toll on their physical and mental health. As such, an in-depth and systematic approach was used to inform the development of Version 3.0 (V3.0) of the glossary to acknowledge the ever-evolving language of PTSD and related terminology, the significant impact of the pandemic, and provide a glossary accessible to all individuals acknowledging the ongoing effort to bridge existing gaps between health professionals and the diverse communities they serve. V3.0 will be published in the Health Promotion and Chronic Disease Prevention in Canada journal. This project has two main objectives: update V3.0 to reflect current terminology, and increase awareness utilizing innovative dissemination strategies to reach key stakeholders.

Patient Population: The development of V3.0 was led by a Senior Authors Team, a multi-disciplinary team of experts, in conjunction with academics, clinicians, and people with lived experience (PWLE) across Canada. Definitions for terms related to psychological trauma were created using recent research and expert knowledge, including input from PWLEs. Along with publication, the Glossary will be linked on all partner websites. A social media strategy will be employed, including a campaign to promote V3.0 to target audiences (i.e., military, Veterans, PSP, healthcare professionals) and engage stakeholders and collaborators to share with their networks.

Results: V3.0 includes the addition of 28 terms, and is in the final stages of refinement. It will be published ahead of the conference presentation (September 2023).

Conclusions: The Glossary of Terms provides the next incremental step towards developing a shared understanding of the common terms used to describe mental health challenges arising from potentially psychologically traumatic events and stressors. We hope that shared understanding helps to reduce stigma, increase access to evidence-based care, and support ongoing improvements in the tools, training, and treatments intended to benefit all of those who serve.

2E04: Screening Positively for Posttraumatic Stress Disorder: Is Avoidance an Issue for Public Safety Personnel?

Shields, Robyn E., MSc[1]**;** Asmundson, Gordon J. G., PhD[1]; Carleton, R. Nicholas, PhD[1]

[1]University of Regina

Introduction: Public safety personnel (PSP) are regularly exposed to diverse potentially psychologically traumatic events (PPTE), which are associated with increased self-reported symptoms of posttraumatic stress disorder (PTSD). Accordingly, more than 23% of PSP screen positively for PTSD. PTSD screening tools assessing symptoms can facilitate early access to evidence-based care. The PTSD Checklist – Version 5 (PCL-5) is a commonly used screening tool. Preliminary results suggest ~30% of Canadian paramedics who would have screened positively for PTSD using the PCL-5 did not because none reported avoidance symptoms; however, their vocational requirements may prohibit avoidance (e.g., required to revisit a PPTE scene). The results were based on a relatively small sample; therefore, current study was designed to further assess the influence of PCL-5 avoidance items on positive PTSD screens among PSP.

Methods: Archival data was used from a large sample of PSP ($n = 5813$) and the general population ($n = 2631$). The PCL-5 was used to assess PTSD symptoms. Positive screening proportions were calculated for each PSP sector, the total PSP sample, and the general population sample. Differences based on removing each of the four symptom cluster requirements were compared across PSP occupational groups, and between the PSP and general population samples.

Results: Removing the avoidance criterion statistically significantly increased the proportion of positive screens for the PSP sample ($p = .03$, Cramer's V = .04), but not for the general population sample. Removing the avoidance criterion statistically significantly increased the proportion of positive screens among correctional workers ($p = .02$, Cramer's $V = .12$), firefighters ($p = .04$, Cramer's $V = .10$), paramedics ($p = .01$,

Cramer's $V = .13$), and Royal Canadian Mounted Police officers ($p = .006$, Cramer's $V = .10$); however, there were no statistically significant differences in screening proportions for municipal/provincial police and public safety communicators.

Conclusions: Removing the avoidance criterion statistically significantly increased positive screening proportions in the PSP sample, but not in the general population; accordingly, PSP may be less likely to endorse PCL-5 avoidance items, possibly because of vocational requirements that limit their ability to engage in overt avoidance behaviours. The PCL-5 avoidance items may not fully account for PSP avoidance behaviours, warranting further investigation and possible assessment accommodations.

2E05: Research to Practice: The development of tailored mental health programming for healthcare workers and public safety personnel

O'Connor, Charlene, MSc[1,2]; **Remers, Shannon, MSc**[1,2,3]**;** Ritchie, Kim, PhD[2,3]; Primiano, Sandra, PhD, PsyD[1,2]; McKinnon, Margaret, PhD, Psych[1,2,3]

[1]Homewood Health; [2]Homewood Research Institute; [3]McMaster University

Program/Intervention Description: As the COVID-19 pandemic evolved, healthcare workers (HCW), public safety personnel (PSP) and essential workers had to adapt to drastic changes in their working conditions. Overwhelming increases in workplace stress and uncertainty, as well as frequent trauma exposure, placed the mental health of HCWs and PSP at greater risk than ever before.

In response, Homewood Health sought to understand the unique mental health impacts of the pandemic on HCWs and PSP and to translate that knowledge directly into practice with the development of HCW and PSP-specific mental health treatment programming. For HCWs, treatment modules related to moral injury (self, other), self-compassion, identity, relationships, burnout and work-related emotion regulation were developed based on the most recent best-practice evidence available and clinical expertise. For PSP, existing dedicated programming was reviewed and enhanced.

For HCWs, programming was developed for both inpatient and outpatient group formats. For each treatment theme, session content included psychoeducation, self-reflection and discussion, and the introduction and practice of psychotherapeutic strategies. Inpatient programming was piloted, evaluated, revised and refined, and manualized, and interdisciplinary clinical staff (social workers, occupational therapists, psychotherapists, addictions counsellors, and physicians) were formally trained. Outpatient programming was offered as a pilot to all HCW customers of Homewood's Employee and Family Assistance Program.

Evaluation Methods: In the pilot phase of programming development, participants were invited to provide feedback anonymously for evaluation purposes. Feedback was solicited on the relevance, engagement and impact of the treatment content and was used to revise and refine content. For inpatient programming, clinical outcomes are collected systematically with self-report measures of depression (PHQ-9), anxiety (GAD-7), substance use/cravings, emotional regulation, PTSD (PCL-5), quality of life, functioning, and others.

Results: Feedback in the pilot phase reflected participants' positive responses to the programming. Participants found the programming to be relevant, effective in meeting their needs and helpful to their recovery. As the programming moves into full implementation, program outcomes will continue to be monitored and reported.

Conclusions: The positive results of the pilot phase to provide HCWs and PSPs tailored, relevant mental health treatment informed by a comprehensive understanding of the mental health impacts of the pandemic on HCWs and PSP are promising as it moves into full implementation. This project provides a hopeful example of rapid knowledge translation into clinical practice to meet the urgent and evolving needs of HCWs and PSP through comprehensive inpatient and outpatient mental health treatment.

3A04: Sexual victimization among RCMP officers: Understanding the challenges

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Introduction: The Royal Canadian Mounted Police (RCMP) is Canada's national police service, comprised of over 19,000 officers (74.6% men) who work to prevent and solve crime, uphold the law, and ensure the safety and security of Canadian citizens (RCMP, 2021). The paramilitary roots and structure of the RCMP are evident in the organizational culture (Bastarache, 2020; RCMP, 2018). Military and police cultures tend to be hegemonically masculine (Angehrn et al., 2021; McCristall & Baggaley, 2019; Prokos & Padavic, 2002; Workman-Stark, 2015). Hegemonic masculinity is a theoretical construct describing the normalization of patriarchal structures in society through idealization of a specific form of masculinity (Connell & Messerschmidt, 2005; Donaldson, 1993). Hegemonic masculinity can facilitate repression of women, gender diverse individuals, and men who do not adhere to the specified notions of masculinity (Connell, 1995; Connell & Messerschmidt, 2005; Donaldson, 1993) and may pervasively negatively impact mental health (Angehrn et al., 2021; Dworkin, 202; Smith et al., 2022). The Merlo Davidson

class action lawsuit against the RCMP identified over 2,000 women officers who experienced sexual violence and gender harassment perpetrated by their men colleagues (Bastarache, 2020); however, no empirical study has been conducted to quantify the scope of sexual victimization among RCMP officers.

Methods: We are conducting a largescale assessment (i.e., *n* > 1000) to bridge that gap in the literature by identifying the scope of sexual victimization among RCMP officers (i.e., how often it is occurring, who is committing it, where it is happening, who it is happening to).

Results: The proposed presentation will provide study details, updates, and results as available regarding self-reported lifetime and RCMP-specific sexual victimization, mental health disorder symptoms, organizational stressors, and institutional betrayal.

Conclusions: The proposed presentation will also discuss the implications of research on military sexual trauma for research on sexual victimization within the RCMP.

3B01: Evaluation of the Before Operational Stress training program: Mental health, risk, and resiliency outcomes

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Introduction: Public safety personnel (PSP) in Canada frequently face exposure to operational stressors such as potentially psychologically traumatic events which place them at high risk for developing posttraumatic stress injuries (PTSIs). The injuries may be associated with several adverse mental health outcomes that can result in diverse, severe, and debilitating conditions. Many treatment and proactive training programs have been proposed and developed in response to PTSI; however, there are several barriers to accessing effective PTSI treatments, and recent reports showcase that many proactive programs have insufficient empirical support, or are insufficiently tailored to unique needs of PSP.

The Before Operational Stress (BOS) program was designed as a proactive mental health training program to be delivered early in the career of PSP members. By providing participants with psychoeducation materials and actionable tools designed to integrate with the diverse stressors experienced by PSP, the BOS program is intended to bolster mental health and resiliency, and help mitigate the effects of PTSIs.

Methods: The current program evaluation investigates delivery of the BOS program to various Canadian PSP who

were enrolled in one of three separate training modalities: 1) Intensive (eight 2-hour in-person group meetings with a clinical facilitator); 2) Peer (eight 1-hour virtual group meetings with a clinical facilitator); or 3) Online (self-directed access to program materials). All PSP members enrolled in the BOS program were invited to participate in an independent research study consisting of three surveys at pre-training, post-training, and 3-months post-training follow-up. The surveys assessed for demographic information, mental disorder symptoms, mental health knowledge and resiliency variables.

Results: Previous research has evidenced small to moderate improvements in PTSD symptoms, quality of life, stigma, and perceived social support following Intensive BOS training. The current data further supports the effectiveness of BOS and provides insights into effects of delivery modality, as well as sex and gender, on self-reported mental health outcomes post-training.

Conclusions: The current project also provides an unprecedented opportunity to elaborate upon previous research support for the BOS program with a large and diverse sample of participants across many PSP and frontline sectors. The proposed presentation includes results from the current study, and discusses implications for the future of evidence-supported mental health training programs.

3B02: Experiences of the Before Operational Stress training program from participating public safety, healthcare, and other frontline personnel: A qualitative analysis

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Introduction: Public safety personnel (PSP) and healthcare workers are at increased risk of developing posttraumatic stress injuries (PTSIs) associated with routine exposure to operational stressors including potentially psychologically traumatic events. Proactive efforts to mitigate the increased risk are difficult because, despite myriad extant mental health training and treatment programs, few are evidence-supported and there are no currently agreed-upon best practices.

The Before Operational Stress (BOS) program is an evidence-informed mental health and resiliency training program designed specifically to address the unique challenges facing public safety personnel, healthcare workers, and other frontline workers. BOS training was intended to mitigate the effects of psychological stressors on mental health and includes programming to address and educate on aspects of PSP and healthcare worker culture, the physiological and

psychological effects of operational stressors, and provide coping techniques (e.g., using a window of tolerance to monitor arousal levels). Research on the behavioral and mental health outcomes associated with BOS training exists, but there is very little qualitative data available detailing PSP experiences and perceptions of the program.

Methods: The current study used data from 41 in-depth semi-structured interviews with PSP and healthcare workers who had completed the BOS program to investigate 1) whether and how BOS training affected self-perceptions of their own mental health; and 2) to obtain firsthand accounts of how the training content integrated into their personal and professional lives. Data were analyzed using team-based template analysis.

Results: The four overarching themes that emerged were: 1) journeys to healing; 2) the ripple effect of helping; 3) context matters to how the program was received; and 4) the destabilizing effect of organizational pressures. The results suggest BOS was positively received, with participants perceiving the program as helpful, finding new ways to engage in discourse about mental health in the workplace, and finding new tools and skills to move away from previous unhelpful coping mechanisms.

Conclusions: The results also provide avenues for discussion of the many difficulties arising from persistent mental health stigma, and the complicating context of organizational and systemic barriers impeding access to mental health resources and care.

This presentation discusses the main themes and key subthemes identified in the qualitative analysis, and describes participant experiences in the BOS program – including potential barriers to accessing mental health resources.

3B03: Elucidating the healthcare worker experience of work life and stress over the course of the COVID-19 pandemic through analysis of qualitative survey data

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Brief Description: The COVID-19 pandemic added significant strain on our healthcare system, which resulted in increased stress for healthcare workers, putting them at high-risk for negative, long-term mental health outcomes. Staff wellness assessments were offered to staff at a large trauma centre in Toronto, as part of a staff wellness program (wherein they could elect to receive targeted feedback, including suggestions for supportive resources). This project aims to illuminate the staff experience over 15-months of the

COVID-19 pandemic, through analysis of open-ended survey responses.

Patient Population: Monthly wellness assessments were sent to staff at Sunnybrook Health Sciences Centre via e-mail. Assessments included quantitative measures of burnout, anxiety, depression and posttraumatic stress, questions regarding types of resources accessed, open-ended questions regarding staff needs, and space for comments. This presentation will report on the qualitative data captured. Data analysis is currently underway, taking a constant comparative approach to thematic analysis for open-ended comments, and a content analysis approach for short answer survey responses.

Results: Two-hundred and seventy-eight (278) comments were received on Wellness Assessments between May 2020 – July 2021. Eighteen open-ended questions were asked between June 2020 – July 2021, with an average of 129 responses per question. Developing codes highlight stressors at work (e.g., lack of supplies for hand hygiene) and at-home (e.g., caring for children), methods of coping (e.g., avoiding the news, establishing and maintaining routines), appreciation for sources of support and acknowledgement of hard work (e.g., pandemic pay), and the importance of transparent and ongoing communication by hospital leadership.

Conclusions: Understanding staff experiences and the stressors faced over the course of the pandemic is important in the creation of supportive resources for staff in the aftermath of this disaster, and in planning for potential future pandemics.

3B05: Correctional Officer Culture in Canada: Proving Oneself as a Gateway to Acceptance

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Introduction: Correctional officers (COs) work in a unique climate of continual carceral care, balancing interpersonal relationships, and prison dynamics with organizational and occupational duties. COs form a distinct group with shared meaning that varies by workplace location and within the carceral space, work cultures can be shaped by both formal and informal "cultures" that determine the nature of the work environment.

Methods: Researchers have identified several complexities of CO workspaces; however, unclear remains how COs navigate correctional culture and what influences CO culture. Drawing on semi-structured interviews with COs at numerous federal penitentiaries across Canada, we examine what factors influence CO culture and peer acceptance. Using a constructed semi-grounded approach, we analyze how specific behaviours and values within the CO occupational group shape CO culture and illustrate how proving oneself is fundamental to in-group acceptance.

Results: We suggest that proving oneself is valued highly within the workplace, and is achieved through developing trust, putting in time, officer performance, work ethic, showing respect, and by having each other's backs on the job. In general, COs reported a desire for acceptance and in-group benefits; however, the process of performance can lead to stress and difficulty for new officers.

Conclusions: We discuss the implications of our results with suggestions regarding practical and policy considerations.

3E01: Ontario Workplace Safety Insurance Board Mental Stress Injury Claims for Public Safety Personnel from 2017-2021

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Introduction: In Ontario, a public safety personnel (PSP) who has a work-related psychological injury is eligible for support through the Workplace Safety and Insurance Board (WSIB) of Ontario, which provides health care coverage, loss of earnings benefits, and return to work (RTW) support services. WSIB's Mental Stress Injury Program (MSIP) covers three categories of mental stress injuries: chronic mental stress, traumatic mental stress, and post traumatic stress disorder (PTSD). WSIB MSIP claims represent a significant human and financial cost for Ontario's PSP, public safety organizations and their communities.

Methods: This quantitative descriptive study explored claim-level data from WSIB Ontario for PSPs who had approved MSIP claims between January 1, 2017 and December 31, 2021. Pearson chi square tests were conducted with and without Bonferroni Adjustments to counteract the possibility of Type I errors during multi-level comparisons. IBM SPSS version 28.0.1.1 was used for all statistical testing.

Results: Of the 6674 PSP claimants who had an approved MSIP claim with WSIB Ontario between 2017-2021, 32.7% were non-commissioned police officers, 28.4% were paramedics, 19.3% were correctional service officers, 9% were firefighters, 7.1% were dispatchers/communicators, and 1.7% were managers in social, community and correctional services. By-law enforcement and other regulatory officers, probation and parole officers and related occupations, fire chiefs and senior firefighting officers, and commissioned police officers each made up less than 1% of the population. Police officers, firefighters, and dispatchers/communicators had more cumulative events that resulted in their claims, while paramedics and correctional service officers had more single events. More police officers, firefighters, and dispatchers/

communicators did not participate in RTW processes, while more paramedics and bylaw enforcement officers RTW successfully.

Conclusions: The results of this study indicate that PSPs whose WSIB claims were linked to a single traumatic event were more likely to RTW compared to those who had their claims approved related to cumulative traumatic events. This finding suggests that PSPs would benefit from proactive mental health supports to reduce the impact of work-related trauma exposures, as well as prompt approval of worker's compensation claims and access to related healthcare and RTW when needed. Research is continuing to evolve in this area, and this study is the first to quantify the number of WSIB Ontario MSIP claims in the first 5 years since presumptive PTSD legislation came into force in Ontario in 2016.

3E03: Ontario Public Safety Personnel with Work-Related Psychological Injuries: Return to Work Experiences

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[1]*Queen's University*

Introduction: Public safety personnel (PSP) perform work that puts them at greater risk of psychological injury than the general public. PSP who subsequently develop posttraumatic stress disorder (PTSD) or other mental health conditions may need to take time off of work and use the workers compensation system. Very little is known about the experiences of PSP making this type of claim in Ontario to the Workplace Safety and Insurance Board (WSIB), or which healthcare professionals (HCP) PSP access as part of the treatment and return to work (RTW) process. This study captures the experiences of Ontario PSP in their RTW journeys, including with employers, WSIB, and HCPs.

Methods: A survey-based study was conducted, using email and social media platforms to distribute the survey to PSP across Ontario. Quantitative data were summarized using means and frequencies, and open text results were analyzed using qualitative framework analysis.

Results: 145 survey respondents met the inclusion criteria for the study. On a scale out of 5, PSP rated their experience with WSIB and employer support as poor on their first RTW attempt with an average rating of 2.93 and 2.46 respectively. The top three HCPs accessed by PSP were psychologists (61%), occupational therapists (OT; 60%) and general practitioners (GP; 44%). Respondents identified the cultural competence of HCPs in understanding their work demands and work culture as very important.

The information gathered in this study indicated that PSP would like to RTW after making a work-related psychological injury claim with WSIB. However, PSP face many barriers in successfully executing this, such as lack of support from employers, workplace stigma, HCP not having the systematic knowledge required for treatment, and difficulties with system navigation and getting access to health services and workplace accommodations.

Conclusions: Person-centred approaches to workers compensation processes and RTW planning are indicated, along with supportive work environments that enable necessary accommodations and consider the barriers that mental health stigma can create. Access to HCPs with competence in work-related psychological injuries, as well as an understanding of the specific nature of PSP work, is critical. Additionally, access to work-focused therapies is indicated in the RTW process. Future research should focus on ways to overcome RTW barriers and how to support PSP mental health within workplaces, to reduce the number of worker's compensation claims and their duration.

3E06: Sound the Siren: The impact of social media on the mental health and occupational performance of volunteer firefighters

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Introduction: Social media has become a powerful platform for social interaction and has created unparalleled access to emergency scenes and first responders. The evolution of social media can have significant consequences for first responders. For volunteer firefighters in rural communities, social media has become a source of occupational stress impacting both mental health and occupational performance. Volunteer firefighters in rural Nova Scotia participated in the Sound the Siren research study exploring how their occupational environment impacts mental health and well-being. Social media emerged as a significant finding.

Methods: Thirty firefighters from three fire departments in rural Nova Scotia participated in this qualitative study that explored how the occupational environment impacts the mental health and well-being of volunteer firefighters in rural Nova Scotia. To answer the research questions, focus groups were held with twenty-one fire officers, and a series of three interviews were held with nine frontline firefighters. Each interview built upon the previous with photo-elicitation used during the second interview as a tool to enhance discussion on the difficult topic of mental health and to joint theorize with research participants on emerging themes in the study. During the photo-elicitation process, the majority of firefighters retrieved photos from social media to share with the researcher, which laid the foundation to explore the topic

of social media during the third interview.

Results: The findings from this study revealed that social media is a significant area of occupational stress for volunteer firefighters that impacts both mental health and occupational performance. Four areas of concern were discussed: fear of online criticism and public perception, image and reputation, trauma reminders, and moral dilemmas. Volunteer firefighters discussed how online criticism, public perception, and concerns surrounding the reputation and image of themselves and their fire departments impact their performance on the fire ground. Additionally, volunteer firefighters discussed how seeing images of potentially traumatic incidents on social media created trauma reminders and moral dilemmas that impact their mental health.

Conclusions: The findings from this study provided initial insight into the impact of social media on volunteer firefighters. More research is needed to understand this social media phenomenon as an occupational stressor among all public safety personnel and develop strategies to manage social media-related occupational stress. Furthermore, more research is needed to understand how social media impacts public perception of first responders which might influence public opinion and attitudes towards these occupations.

6A03: A Cross-Sectional Investigation of Post-Traumatic Stress Disorder Symptom Endorsement Among Canadian Healthcare Workers and Public Safety Personnel Throughout the COVID-19 Pandemic

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Introduction: Healthcare workers (HCWs) and public safety personnel (PSP) have faced diverse stressors at the forefront of the COVID-19 pandemic. Symptoms of Post-Traumatic Stress Disorder (PTSD) have been reported among these occupational groups throughout the pandemic, yet there is an absence of knowledge in the Canadian context. A cross-sectional investigation of Ontario HCW and PSP was conducted to understand PTSD symptoms among Canadian HCWs and PSP across the waves of the COVID-19 pandemic. An exploratory analysis of demographic factors (e.g., profession, age, sex) was additionally conducted to elucidate the potential of specific groups endorsing elevated PTSD symptoms.

Methods: This study is part of a broader investigation of Canadian HCWs and PSP during the COVID-19 pandemic. HCWs and PSP were invited to participate in an anonymous, online survey including demographics (e.g., age, gender, sex, profession) and the Post-Traumatic Checklist for DSM-5 (PCL-5) between March 1, 2021 and November 5, 2022. Waves of the pandemic were constructed in accordance with Public Health Ontario's reports. One-way ANOVAs and four-way factorial ANOVAs with post-hoc multiple linear regressions and Wilcoxon tests were conducted.

Results: Three-hundred and ninety (N=390) participants were included in analysis (n=264 HCW, n=126 PSP). A linear trend in PCL-5 scores across waves of the pandemic was significant among the full sample [$F(1,388)=5.29$, $p = 0.022$] and was driven by PSP ($p < .05$). PCL-5 scores differed across HCW professions when controlling for wave, sex and age, such that nurses scored significantly greater than occupational therapists and medical physicians (p's $<.05$), but not significantly different than respiratory therapists or personal support workers (p's $>.05$). PCL-5 scores differed across PSP professions when controlling for wave, sex and age such that firefighters reported lower PCL-5 scores than dispatchers ($p < .05$). A significant age by sex interaction among PSP revealed that females had higher PCL-5 scores than males in the 40-49 age group ($p < .05$) and females aged 40-49 reported higher PCL-5 scores than females aged 30-39 and 50-59 (p's $< .05$).

Conclusions: Our findings suggest that PSP reported increased PTSD symptoms across time, with females and those aged 40-49 endorsing the greatest symptoms. Among HCWs, PTSD symptom endorsement did not increase over time, but some professions (i.e., nurses, respiratory therapists and personal support workers) reported higher PTSD symptoms than their colleagues, regardless of age, sex and wave of the pandemic. Longitudinal research is needed to build upon this cross-sectional work.

6A04: Understanding the influence of Organizational and Leadership Practices on the Mental Health of Public Safety Personnel during the COVID-19 Pandemic

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Introduction: Unprecedented circumstances during COVID-19 have exposed Public Safety Personnel (PSP) (e.g., police officers, firefighters, paramedics, border patrol, corrections

workers, and communication officers and dispatchers) to new organizational (e.g., job context) and operational (e.g., job content) stressors. Previous research has identified that many of these organizational stressors, such as workload, work culture, and relationships with leaders can negatively impact the mental health of PSP. After three years of facing ongoing challenges during the pandemic, we are now facing a perilous situation of PSP leaving the workforce due to poor mental health, including depression, anxiety, PTSD, and moral injury. There is a need to identify the types of organizational stressors present in PSP occupations to improve job retention and PSP mental health. The purpose of this study was to understand PSPs' perceptions of the types of organizational and leadership stressors during the pandemic, how these stressors influenced their mental health, and to identify organizational practices that can better support PSP mental health and wellbeing.

Methods: PSP from across Canada were invited to participate in a virtual semi-structured interview from June 2021 to May 2022 (Phase 1), and from December 2022 to June 2023 (Phase 2). Participants were asked to describe their perceptions of positive and negative types of communication, leadership characteristics, and supports they received from their organizations and leadership during the pandemic and to describe ways that their organization and leadership could more effectively support their mental health. To date, a total of 50 (n=50) interviews have been completed and data collection will continue until saturation. Qualitative data will be coded using MAXQDA software and analyzed through an inductive thematic approach.

Results: Data collection is ongoing, and results will be available for the presentation. Results are expected to contribute a better understanding of the types of organizational and leadership stressors during the pandemic and how organizations can better support the mental health of PSP.

Conclusions: Identifying organizational and leadership stressors will allow for modification or improvement in these contextual aspects of PSP occupations. Organizations and leadership must identify ways to improve the mental health of PSP to increase retention of employees in these essential occupations.

6A05: Canadian Public Safety Personnel´s Intention to Leave Their Profession and/or Organization

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Introduction: Throughout the COVID-19 pandemic, public safety personnel (PSP; public safety communicators, paramedics, firefighters, correctional workers, etc.) have faced an increasing number of challenges, including exposure to potentially morally injurious (PMIEs) and/or traumatic events (PTEs) including enforcing stay-at-home mandates, surveilling social distancing, adapting to ever-changing policies, and negotiating with resistant citizens. Accordingly, PSP are at risk for heightened symptoms of burnout, anxiety, PTSD, depression, and moral injury. Although many challenges PSP face are inherent to the job, PSP organizations play an important role in addressing these challenges and in improving employee outcomes in the face of these challenges. In particular, organizational support may play a role in mitigating adverse mental health outcomes in relation to PMIEs or PTEs through actions such as facilitating a balanced work-home life (e.g., decreased workloads, workhours). To date, however, very limited research has sought to elucidate those organizational and/or professional circumstances among PSP that contribute to staff retention. Here, we sought to understand these factors in relation to PSP's present intentions to leave their profession and/or organization.

Methods: As part of a wider Canadian study on the mental health and experiences of PSP during the COVID-19 pandemic, we collected quantitative and qualitative data regarding PSP's intention to leave their profession and/or organization. In addition to statistical reports on the self-reported likelihood PSP participants will leave their profession and/or organization, we will be conducting a qualitative analysis of text-box comments in relation to these intentions. The following study is approved by the Hamilton Integrated Research Ethics Board #12667.

Results: Data collection remains ongoing. Preliminary results from the initial ~ 500 participants reveal that roughly two in five PSP are more than fifty percent likely to leave their employer/organization; one in three PSP are more than fifty percent likely to leave their profession. Qualitative data are yet to be analyzed and will be completed by the conference deadline.

Conclusions: Results from this study can help inform policy and organizational change, and mental health supports that can ultimately lead to increased work satisfaction and staff retention. Critically, there is an urgent need for PSP organizations to take accountability for the mental health of their employees.

6C01: Psychological Trauma and the Embodied Self: Resting-State Functional Connectivity of the Temporoparietal Junction in Posttraumatic Stress Disorder and its Dissociative Subtype

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Introduction: Several psychiatric disorders can be characterized by alterations in self-consciousness, where the way in which the brain integrates multisensory bodily information is impaired. Importantly, bodily self-consciousness (BSC), the conscious experience of one's body, can be compromised in the aftermath of trauma and is uniquely implicated in symptoms manifesting among individuals with posttraumatic stress disorder (PTSD) and its dissociative subtype (PTSD+DS). The temporoparietal junction (TPJ) is increasingly being recognized as one of the main hubs in the brain for the integration of visual, vestibular, and somatosensory information. Given these functions, the TPJ is critical for facilitating BSC. Although evidence on compromised BSC in psychiatric disorders is emerging, little is known about the effects of chronic psychological trauma on TPJ neural circuitry, particularly among PTSD as compared PTSD+DS. Here, we aim to investigate alterations in resting-state functional connectivity (rsFC) of the TPJ among individuals with PTSD, PTSD+DS, and healthy controls.

Methods: Fifty-six healthy controls, 86 PTSD, and 49 PTSD+DS underwent 6-min resting-state fMRI scans. Whole-brain seed-based rsFC analyses using four seeds (the right anterior TPJ, right posterior TPJ, left anterior TPJ, and left posterior TPJ) were performed.

Results: Seed-based analyses examining the four subregions of the TPJ revealed that, as compared to healthy controls, PTSD+DS and PTSD showed alterations in rsFC to brain regions involved in emotion regulation (superior frontal gyrus and middle frontal gyrus), attention (superior parietal lobule), affect processing (superior temporal gyrus), and multisensory integration (middle temporal gyrus), as well as to an area involved in the visuomotor network (lingual gyrus). Additionally, regression analyses revealed a significant negative correlation between rsFC of the left anterior TPJ with the superior parietal lobule and childhood trauma. This indicates that the higher the exposure to childhood trauma (e.g. abuse and neglect), the less rsFC of the left anterior TPJ with regions involved in attention.

Conclusions: The present findings extend the current neurobiological model of PTSD by demonstrating unique alterations in TPJ neural circuitry among heterogenous

presentations of PTSD. Taken together, these results provide emerging evidence for the need to incorporate the TPJ into current conceptualizations of PTSD and its dissociative subtype.

6E01: Personality Profiles of Royal Canadian Mounted Police Cadets Starting the Cadet Training Program

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Introduction: Personalities of cadets entering the Royal Canadian Mounted Police (RCMP) Cadet Training Program (CTP) are unknown and may differ to the general public. The current study draws from the RCMP Study data to address several gaps in personality research regarding the first normative HEXACO-100 personality profiles for cadets beginning the CTP; differences based on gender and other sociodemographic variables; and differences relative to the general population.

Methods: Participating RCMP cadets (n = 772) starting the CTP completed a web-based questionnaire which included sociodemographic questions and the HEXACO-100 Personality Inventory which includes six personality factors (Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience) and 25 facets. A series of one-way analyses of variance (ANOVA) and independent samples t-tests were used to assess for differences in HEXACO personality factor scores of cadets across sociodemographic categories. A series of z-tests were used to compare HEXACO personality factor and facet scores of cadets to scores from a previously surveyed sample of the general population.

Results: Cadet women reported significantly higher scores on the personality factors of Honesty-Humility, Emotionality, and Conscientiousness and lower scores on Agreeableness and Openness to Experience than cadet men. There were no statistically significant differences observed in Extraversion scores. Older cadets (+ 40 years old) and cadets with more education (university degree or higher) also scored significantly higher on all factor-level scales, except for Extraversion. Relative to the general population, both cadet men and women reported significantly higher scores for Honesty-Humility, Extraversion, Agreeableness, and Conscientiousness and lower levels of Emotionality and Openness to Experience. Cadets also reported notable differences on several facet-level scales compared to the general population including higher scores on Sociability,

Liveliness, Social Self-Esteem, and Altruism and lower scores on Fearfulness and Unconventionality.

Conclusions: The current results indicated differences between cadets and the general population on several HEXACO personality factors and facets and differences between cadets men and women. There is also evidence of differences on personality factors for cadets who had more life experiences (i.e. older, higher level of education). The current results highlight several important personality factors and facets that may be indicative of cadets exhibiting behaviors ideal for policing.

6E02: Mental health and social support among Royal Canadian Mounted Police cadets

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Introduction: Populations, such as public safety personnel (PSP), experience frequent exposures to potentially psychologically traumatic events and other occupational stressors, increasing their risk for mental health challenges. Social support has been evidenced as a protective factor for mental health. Research examining perceived social support and its associations with symptoms related to mental disorders among PSP recruits is limited.

Methods: At the start of the Cadet Training Program, RCMP cadets (n = 765, 72% male) completed a self-report survey which assessed sociodemographic information, social support, and symptoms related to posttraumatic stress disorder, major depressive disorder, generalized anxiety disorder, social anxiety disorder, panic disorder, and alcohol use disorder.

Results: The results indicated statistically significant associations between higher social support and decreased odds of positive screens for generalized anxiety disorder, social anxiety disorder, and panic disorder (i.e., significant Adjusted Odds Ratios=0.90 to 0.95).

Conclusions: High levels of perceived social support ubiquitous among cadets at the start of the Cadet Training Program. Higher levels of perceived social support were inversely associated with positive screens for generalized anxiety disorder, social anxiety disorder, and panic disorder suggesting that perceived social support may be a protective factor against the development of anxiety disorders, in particular. The current results are the first to evidence the stark contrast in perceived social support between new cadets and serving RCMP members,

suggesting the possibility of substantial reductions in perceived social support as a function of service. The current results provide initial estimates of perceived social support and the associations with mental health challenges prior to the onset of training, providing a valuable benchmark for future research with RCMP members, other police, and other PSP groups.

6E03: Putative risk and resiliency factors among Royal Canadian Mounted Police cadets

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Introduction: Many active-duty Royal Canadian Mounted Police (RCMP) officers have mental health disorders. The current study was designed to examine 1) whether RCMP cadets beginning the Cadet Training Program are inherently more vulnerable to developing mental health challenges, by statistically comparing their scores on putative risk and resiliency measures to scores from young adult populations; 2) for sociodemographic differences in the putative risk and resiliency variables among cadets, to aid future comparisons.

Methods: Participants were 772 cadets (72.2% men) who completed self-report measures of multiple putative risk variables (i.e., anxiety sensitivity, fear of negative evaluation, illness and injury sensitivity, intolerance of uncertainty, and state anger) and resiliency. Participant scores were statistically compared to Canadian, American, Australian, and European young adult populations.

Results: Results indicate that cadets had statistically significantly lower scores on all putative risk variables, and statistically significantly higher scores on resiliency, compared to the young adult populations. Concerning sociodemographic differences within the cadet sample, there were statistically significant differences in putative risk and resiliency variables across gender and sex.

Conclusions: RCMP cadets' significantly lower scores on the putative risk variables, and higher scores on resiliency, indicate that they may be psychologically strong; therefore, it may be the nature of policing work, rather than inherent individual differences in risk and resiliency, that lead to active-duty RCMP officers' relatively higher prevalence of mental health disorders.

6E04: Daily Survey Participation and Positive Changes in Mental Health Symptom Scores among Royal Canadian Mounted Police Cadets

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Introduction: Royal Canadian Mounted Police (RCMP) officers are frequently exposed to potentially psychologically traumatic events, leading to increased symptom reporting of many common mental health disorders (e.g., alcohol use disorder [AUD], generalized anxiety disorder [GAD], major depressive disorder [MDD], panic disorder [PD], and posttraumatic stress disorder [PTSD]). Accordingly, 50.2% of RCMP officers screen positively for one or more mental health disorders. Mitigating mental health symptoms in RCMP officers is of the utmost importance. Regular monitoring of mental health symptoms has been associated with improved mental health symptom reporting. Participating in daily monitoring may provide an accessible tool to support RCMP mental health. The current study was designed to assess relationships between completion of daily surveys (i.e., daily mental health symptom monitoring) and self-reported mental health symptoms by RCMP cadets during the Cadet Training Program (CTP).

Methods: Participants included $n = 394$ RCMP cadets (23.9% women) who completed daily self-monitoring surveys, as well as full mental health assessments at pre-training (i.e., starting CTP) and pre-deployment (i.e., approximately 2 weeks prior to deployment), during the 25-week Standard Training Program. Online self-report surveys were used to assess symptoms of alcohol use disorder, generalized anxiety disorder, major depressive disorder, panic disorder, and posttraumatic stress disorder were assessed. Frequency of daily surveys completed were reported and correlations between changes in mental health symptoms and number of daily surveys completed were estimated with Spearman's rank.

Results: A total of 15,400 daily surveys were completed, with a median of 24 surveys. Results evidenced statistically significant inverse relationships between daily number of surveys completed and number of mental health symptoms reported. Specifically cadets who completed more daily surveys during CTP had greater decreases in reported symptoms of AUD ($\rho = -.196$, $p < .001$), GAD ($\rho = -.522$, $p < .001$), MDD ($\rho = -.488$, $p < .001$), PD ($\rho = -.108$, $p < .01$), and PTSD ($\rho = -.383$, $p < .001$).

Conclusions: Between pre-training and pre-deployment RCMP cadets who completed more daily surveys self-monitoring their mental health also had greater decreases in their self-reported symptoms of AUD, MDD, GAD, PD, and PTSD. Regular monitoring of mental health symptoms may provide an accessible avenue to mitigate mental health symptoms among RCMP cadets and officers.

7C01: Associations Between Coping, Supports and Moral Injury Symptoms among Canadian Public Safety Personnel

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Introduction: Public safety personnel (PSP; e.g., police officers, firefighters, paramedics, dispatchers, corrections officers) are frequently exposed to diverse stressors, including human suffering and unpredictable events that warrant fast-paced decision making (Lentz et al., 2021). PSP may be at an elevated risk for moral injury: the profound psychological, social, emotional and spiritual/existential impact that some individuals experience after exposure to potentially morally injurious events (PMIEs; Litz et al., 2009). Moral injury has been associated with a range of adverse mental and behavioral outcomes, including Post-Traumatic Stress Disorder (PTSD), depression, anxiety, suicide, pain and sleep disturbance (Hall et al., 2021). Despite the potential moral injury among PSP, presently limited research exists on moral injury among this professional group (Lentz et al., 2021), rending it unclear how best to support PSP in this regard. Importantly, PSP may regularly use coping methods and supports, such as substance use, friends and family, or exercise to deal with occupational stress (Anderson et al., 2022). A better understanding of factors that mitigate moral injury is urgently needed. To explore the impact of coping strategies and supports on moral injury symptoms, we will investigate the associations between social and organizational support, self-compassion, spirituality/religiosity and substance use on self-reported moral injury symptoms among PSP.

Methods: Canadian PSP were invited to participated in an anonymous online survey about their mental health and experiences during the COVID-19 pandemic, including a demographic form (e.g., age, sex, gender), and questionnaires

indexing moral injury symptoms, perceived organizational support, social support, spirituality/religiosity and substance use. A hierarchical multiple linear regression analysis will be constructed to assess the relation between coping strategies, supports and moral injury symptoms, when controlling for childhood adversity and prior mental health diagnosis, which each may be independently associated with moral injury symptoms.

Results: It is hypothesized that purported adaptive coping strategies and supports, such as social support, organizational support, self-compassion and spiritual well-being will be associated with lower moral injury symptoms. Further, it is hypothesized that purported maladaptive coping strategies, such as substance use, will be associated with higher moral injury symptoms.

Conclusions: To our knowledge, this is the first study to explore the association between moral injury and coping strategies and supports among Canadian PSP. This research will enhance our understanding of factors associated with moral injury and can inform programs developed to support PSP.

Poster Presentations

P114: Implementation of the PeerOnCall apps: Insights from the Fire Sector

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Introduction: The fire service has long recognized the impact of potentially traumatic events on firefighters' mental health. Peer support is a highly sought-after resource within the fire sector to manage mental health challenges and occupational stress. Given the significant variances in the fire service structure across Canada (volunteer, paid, or composite), peer support availability and variations are vast. The PeerOnCall and PeerOnCall Support paired peer support apps have been developed to increase access to peer support and reduce barriers such as limited or no access to peer support, stigma, and privacy concerns. The app(s) features include anonymous calling or texting to internal peer supporters, self-screening tools, and educational resources. This study aims to evaluate the implementation, use, and impact of the PeerOnCall apps within the fire sector. The decision-making process for participation in the 6-month trial period of the apps provided critical insights into the landscape of peer support within the fire sector in Canada and the unique challenges faced.

Methods: Fire departments (both paid and volunteer) across Canada were recruited to participate in a six-month trial of the apps. Using the Consolidated Framework for Implementation Research, barriers and facilitators to implementation are examined. Field notes from initial presentation meetings with fire departments as well as baseline semi-formal interviews with organizational champions were used to gather information on implementation.

Results: Various factors impacted the decision-making process and choices by fire departments to participate or not participate in the 6-month trial phase. Common valued aspects were free access, inherent beliefs in the usefulness of peer support, and the co-design process used. Commonly expressed concerns were privacy, ongoing costs, simplicity of use, and training burden. In services with existing peer support, how the app would fit with the current peer support model, resources and services was a primary concern. In services without peer support, the motivation and training support for implementing peer support increased the perceived value of the app but complicated implementation. Latent observed factors included attitudes and competency with respect to technology, culture, prior experiences with research(ers), and the trust established with the implementation team attributed to their experience in firefighter research and service.

Conclusions: The PeerOnCall and PeerOnCall Support apps have the potential to provide a needed and desired tool to access anonymous peer support and resources in one place. Given the vast differences in fire service organizations across Canada, there are unique challenges to the implementation of a peer support app.

P116: A Theory and Practice Informed Approach to Crisis Intervention for Public Safety Personnel in Canada – Identifying knowledge gaps to inform action

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Introduction: Public Safety Personnel (PSP) have been identified as a priority group for suicide prevent efforts due to their exposure to traumatic events, rates of mental health distress, and increased risk for suicidality. Barriers to accessing mental health services persist among PSP groups, including stigma and organizational culture. Crisis lines are an evidence-based intervention and key component of the Canadian Federal Framework for suicide prevention. However, little is known about whether PSP access crisis line services, what challenges they may face in making use of these services, and whether they experience existing crisis services as safe,

effective and appropriate at meeting their acute mental health needs.

Working with PSP-serving organizations and Talk Suicide Canada, the national suicide prevention crisis line, we aim to explore PSP crisis line needs and preferences; examine the perspectives of crisis line workers; and co-create evidence-based interventions to support both PSP who wish to access crisis lines and responders who provide services.

Methods: This project is designed in three iterative phases. Phase 1 involves community engagement to understand existing systems and needs. Additionally, we will examine current crisis line usage patterns, contexts, and outcomes through a retrospective review of a sample of anonymized crisis line interactions initiated by PSP. We will also conduct a national survey to examine PSP barriers and enablers to accessing crisis lines. In phase 2, we will conduct interviews and focus groups to better understand the experiences of PSP who have and have not accessed crisis lines in a time of need, as well as the experiences and views of crisis sector staff who provide services to PSP. In phase 3, we will build on our findings to co-design services, interventions, recommendations, and supports with PSP and crisis line responders to better meet the needs of PSP in crisis.

Results: Our project received ethics approval and is in progress. Based on the preliminary review of 47 anonymized text interactions, PSP who contacted the Talk Suicide Canada text service were predominantly early to mid-career (mean age at time of interactions: 31, age range 18-51), female-identified (55%, n=26), and firefighters (47%, n=22). Preliminary results from phase 1 will be shared at the CIMVHR Conference.

Conclusions: Our research findings will help inform suicide prevention strategies and crisis line services so that PSP have access to life-saving crisis line supports when needed and that crisis services are experienced as equitable, acceptable, safe, and effective.

P118: Longitudinal Study of Canadian Correctional Workers' Well-being: A Comparison of Self-Report and Diagnostic Interview Results

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Introduction: Correctional officers in federal penitentiaries across Canada play a crucial role in providing emergency services within their work environments, consistent in many ways with the occupational responsibilities other public safety personnel (PSP), for example, they provide emergency medical assistance, crisis intervention, and respond to fires. Due to their work environment, officers are at higher risk of developing mental health disorders compared to the general population over their occupational tenure. While mental health challenges among PSP have been explored, there is limited understanding of whether disclosure of mental health challenges is more likely to occur during self-report survey completion, compared to during diagnostic interview administration. Understanding whether differences exist between administration methods is crucial for accuracy of diagnostic research within the population. Thus, the present study aimed to evaluate the prevalence of mental health challenges as disclosed by correctional officer recruits (CORs) in the Correctional Service of Canada (CSC) before commencing their careers in federal penitentiaries, by comparing both self-report survey and diagnostic interview administration records.

Methods: The current study will use data from the Canadian Correctional Workers' Well-being, Organizations, Roles, and Knowledge (CCWORK) study. The CCWORK study uses a longitudinal design with self-report surveys administered online prior to CORs beginning the CSC Correctional Training Program (CTP) and each year thereafter. CORs are also administered the Mini Neuropsychiatric Interview (MINI) yearly, which is a structured diagnostic interview developed to assess probable diagnoses of specific DSM-5 mental health disorders. Self-report survey data and MINI data will be compared herein, to ascertain whether there are differences in baseline disclosure of mental health symptoms within this population based on modality of administration (self-report vs. diagnostic interview).

Results: Prevalence of mental health disorder disclosure in CORs is hypothesized to be approximately equal across both self-report survey and diagnostic interview administration. Analyses are being conducted using the MINI baseline data to ascertain if statistically significant differences exist between these administration methods. In self-report survey administration, relatively few participants (n=21 or 4.6%) reported a lifetime history of a mental health disorder diagnosis at baseline.

Conclusions: Understanding whether symptoms are over or under-reported using self-report measures in CORs is critical to inform appropriate assessment measures and accurately interpret mental health disorder prevalence rates. Through examining discrepancies between these assessment tools, researchers and clinicians will be able to identify and develop strategies to mitigate biased reporting.

P119: Clinical Outcomes Amongst Military, Veterans, and First Responders Admitted to a Concurrent Trauma and Addiction Program

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Introduction: Both military and public safety personnel populations are at increased risk of developing posttraumatic stress disorder (PTSD). There is also evidence to suggest that those experiencing greater PTSD symptom severity may be more likely to develop substance misuse or other addiction issues. Further, this pattern of comorbidity is often associated with greater mental distress across other domains including anxiety and depressive symptoms. Therefore, addiction treatment programs for these populations should aim to address a wide variety of mental health conditions. The goal of this study was to explore addiction and mental health outcomes of a concurrent trauma and addiction program for military, veterans, and first responders. Specifically, we aimed to determine if program completion was associated with decreases in symptoms of addiction and mental distress.

Methods: Participants (N = 124) were military, veterans, and first responders (aged 18+) admitted to an inpatient treatment program for concurrent SUD and PTSD. All participants consented to have their data used for research purposes. The majority of participants (71.8%) were admitted to treatment for alcohol use disorder. Upon admission, all participants completed a battery of standardized measures used to assess symptoms of addiction including substance dependence and cravings, and associated mental health symptoms including posttraumatic stress, anxiety, and depressive symptoms. The same measures were administered again at discharge after participants had undergone nine weeks of inpatient programming consisting of multiple evidence-based modalities. Repeated measures t-tests were used to assess score changes across measure between admission and discharge.

Results: 88.6% of participants completed treatment. There were significant decreases in substance dependence (t(89) = 10.58, p < .001) and substance cravings (t(89) = 7.73, p < .001). Further, posttraumatic stress (t(89) = 11.25, p < .001), anxiety (t(89) = 12.71, p < .001), and depressive symptoms (t(89) = 12.86, p < .001) all showed clinically significant improvements over the course of treatment.

Conclusions: The inpatient treatment program for co-occurring SUDs and PTSD yielded positive outcomes for both addiction symptoms and mental distress. The overall improvements in psychological functioning are particularly notable given that mental distress is associated with greater risk of negative outcomes following treatment for SUDs. These results suggest highlight the value of addiction programs that aim to target concurrent mental health symptoms.

P121: Public Safety Personnel's Experiences with Formal and Informal Mental Health Supports and their Associated Outcomes during the COVID-19 Pandemic

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Introduction: Public Safety Personnel (PSP) occupations are known to be highly stressful and can lead to serious mental health outcomes, such as depression, anxiety, PTSD, and moral injury. Previous research has identified that having both informal supports (e.g., family, friends, and colleagues) and formal supports (e.g., specialized mental health services) can be protective or mitigate the impact of stress on PSP mental health. During the COVID-19 pandemic, public safety personnel (PSP; e.g., police officers, firefights, paramedics) faced increased stressful and potentially morally injurious situations, such as fear of contracting COVID-19 and transmitting it to loved ones, inadequate resources and staffing, high workloads, and public backlash. Moreover, social distancing and closures in many mental health services made it more difficult for PSP to engage in their usual methods of accessing informal and formal supports. The purpose of this study was to identify the informal and formal supports PSP accessed during the pandemic and to gain a deeper understanding of how these supports contribute to mental health.

Methods: PSP from across Canada were invited to participate in virtual semi-structured interviews from June 2021 to May 2022 (Phase 1), and from December 2022 to June 2023 (Phase 2). Participants were asked to describe their use of supports during the pandemic, including family, friends, colleagues, physicians, peer-support, EAP, mental health services, and others. Participants were also asked to comment on the types of mental health supports they would like to access but is not currently available.

Results: To date, a total of 50 (n=50) interviews have been completed and data collection will continue until saturation. Qualitative data will be coded using MAXQDA software and analyzed through an inductive thematic approach.

Conclusions: Understanding PSPs' utilization of supports during the pandemic can inform a more targeted approach to bolster development of either linkages with family, peer supports, or mental health services. Improving mental health services for PSP is critical to increase retention of PSP.

P124: PeerOnCall: Co-designing app-based tools for peer support

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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 who/when/how to reach out, stigma, and concerns about privacy. App-based technology has the potential to increase access and reduce barriers to reaching out, however, it needs to be relevant and responsive to the unique needs of the community. The goal of this study was to engage Public Safety Personnel (PSP) in an iterative co-design process to develop peer support tools, not only for frontline workers, but also for peer support providers.

Methods: A multi-phase process of human-centred co-design was adopted to gather input from key stakeholders regarding mental health 'pain points' to address in the app, and the design principles, tools, and resources to inform the content and features of both the PeerOnCall app for frontline workers, and the paired PeerOnCall Support app for peer support providers. Initial development of PeerOnCall was informed by a series of interviews and focus groups with over 100 PSP across Canada. Co-design of the app for peer support providers was informed by in-depth interviews conducted with 12 key informants who work with peer support providers. User acceptance testing was then conducted to ensure that the app was ready for implementation. Analysis of the interview and focus group transcripts led to identification of principles for optimizing app design and implementation.

Results: A trauma-informed approach informed design of the PeerOnCall app, including a focus on data privacy and security, an easy-to-use interface, and an opportunity for choice in when and how to access support. Feedback from frontline workers was used to create customised information for correctional officers, emergency communicators, firefighters, paramedics, and police, including links to local resources, access to self-management tools and options for a secure, private link to peer support. Input into co-design of the PeerOnCall Support app for peer support providers noted that peer supporters have an increased risk of burnout and re-traumatization, therefore tools for self-evaluation, boundary

setting, and service delivery were included.

Conclusions: The PeerOnCall and PeerOnCall Support apps have the potential to meet many identified needs for high quality, customised, accessible, on demand peer support. Next steps are to study a larger implementation process to help define improvements that will meet the diverse needs of public safety organizations across Canada.

P126: The Mental Health and Well-Being of Provincial and Territorial Correctional Works Pre and During COVID-19: A National Comparison

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Introduction: Drawing on an online survey of correctional service employees in Ontario, New Brunswick, Nova Scotia, Newfoundland and Labrador, Manitoba, Saskatchewan, and Yukon, pre COVID-19, we assessed their mental health and well-being in comparison to that of correctional workers in Alberta, British Columbia, Quebec, Northwest Territories, Nunavut in 2022/2023 (during the COVID-19 pandemic), while providing context.

Methods: Participants include correctional workers across the country and each employees in each provincial and territorial correctional service was surveyed individually about the prevalence of mental health disorders and suicidal behaviours. The analysis presented shows the prevalence of mental health disorders among workers, divided by occupational group, across the country.

We also look to explain why such high prevalence remains among correctional workers by unpacking qualitative responses to open-ended survey items that asked participants to explain how their experiences as contribute or inform their wellness. In addition, we unpack needs of participants tied to mental health treatment seeking and the associated barriers.

Results: Operational correctional workers in institutions and in the community reported substantial symptoms of mental health disorders, most notably posttraumatic stress disorder (PTSD) and major depressive disorder. The prevalence appeared to increase for those in surveyed during COVID-19.

Conclusions: Recognizing the noteably high prevalence of mental health disorders among correctional workers, and how such prevalence appears to have intensified during COVID-19, we present policy and practical recommendations, including specific considerations for mental health and wellness strategies for correctional services.

P128: A Structured Comparison of Firefighter Mental Health Training Programs

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Introduction: Firefighters are frequently exposed to distressing events and critical incidents, such as motor vehicle accidents, burnt bodies, failed rescue attempts, threats to one's own life, and completed suicides. These exposures have made firefighters a high-risk population for occupational stress injuries. As such, various mental health training programs have been designed and implemented in the fire community. Although, with various programs available it becomes difficult to decide which program to take. To address this issue, this study explored the experiences and perspectives of firefighters, resiliency trainers, and fire stakeholders who have delivered or taken different mental health training programs, including perceived similarities, differences, benefits, and challenges of the programs. Data collection has been completed and interim analyses and results are available.

Methods: We recruited 14 participants from a larger Resilient Minds study, who had delivered and/or were course participants in two or more mental health training programs for firefighters (Resilient Minds (RM), Road to Mental Readiness (R2MR), Before Operational Stress). Participants participated in semi-structured interviews, which explored the information that they learned, recalled, used, and their preferences for the program characteristics (content, teaching methods, learning tools/resources). Data analysis was performed using an interpretive description methodology.

Results: Of the 10 participants who took RM and another program, 6 preferred RM, 3 believed both were beneficial in different ways, and 1 preferred another program (R2MR). RM was received positively among participants—the involvement and specificity of training to firefighters, teaching methods, and practical skill development were cited as factors for RM's success. Participants believe that each program is valuable and vary based on individual needs and learning styles and previous exposures. Participants suggest that a tiered approach to mental resiliency training would benefit firefighters.

Conclusions: The interim analyses suggests that there is a preference to RM over other mental health training programs. Participants believe programs may be more or less valuable depending on individual/fire services characteristics, needs, and priorities. As such, participants should be aware of program characteristics such as content, teaching methods, and practical skill development to decide which program will best suit their needs. These results are similar to expected results. We hypothesized that RM would be received positively as the program is designed by firefighters for firefighters and

that program preference would vary based on individual characteristics. The results of this study will be used to inform firefighters about the options available to them, how to choose a program, and future adaptations.

PRIMARILY PHYSICAL HEALTH AND WELL-BEING

Poster Presentations

P123: Firefighters Preventing Cancer, Les pompiers et la prévention du cancer: A Cluster Randomized Trial

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Introduction: Firefighters are at increased risk for Cancer (Demers et al. 2022; Laroche et al., 2021). Behavior of firefighters can be an important component of prevention of cancer. But available studies are preliminary, small, and focus on a limited number of behaviors. Moreover, there is no standardized measure of decontamination behavior. Volunteer firefighters may be at greater need for education as they may lack resources and support. Large scale, theoretically driven interventions that are rigorously evaluated using high quality designs and sound measures are needed to protect firefighters.

Methods: Behaviors associated with carcinogen exposure were culled from the literature and suggested by firefighters on the research team and members of the CAFC. The Firefighters Exposure to Carcinogens Scale was developed and had preliminary validation with a sample of 110 firefighters. A Cluster Randomized Trial in which Departments are Randomized to Intervention or Delayed Intervention was launched in English and French. The target is to recruit 40 all Volunteer Departments with ~20 members per department. Each Department will receive a $50 gift card each firefighter will receive ($60) for completion of scales. Recruitment is through the Canadian Association of Fire Chiefs. As of April 4, 14 Departments and 31 firefighters have enrolled.

Results: The FECS scale appears to be a credible measure of firefighter, belief in the importance of specific behaviors in preventing cancer, self reported behavior, future intentions and self report of barriers to implementation. Following best practice, no analyses are planned before closing the trial. We expect that all firefighters will, over time, increase their use of specific behaviors that may prevent cancer and that this

increase will be greater in the intervention group than in the control group. Future intentions (if resources were available) to do specific behaviors will likely be greater than current behavior.

Conclusions: It is premature to draw conclusions at this point in time. This is a proof of principle study. We will take lessons learned from this study to apply it to a larger study.

P127: The impact of sex on physiological arousal to organizational stress in scenario-based training for police managers

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Introduction: Public safety personnel (PSP) including police officers are routinely exposed to high levels of operational (i.e., physical duties) and organizational (i.e., structural, contextual aspects of work) stressors, which negatively impact psychological and physical health, performance, and resilience. While most research explores the physiological effects of operational stressors, the extent to which organizational contexts elicit physiological arousal remains unexamined. The current study also addresses the underrepresentation of females and sex-based analyses in applied research and the hyper-masculinized environment of policing. Given known sex differences in basic human psychophysiology, the role of sex on organizational stress and physiological arousal in police should be explored.

Methods: The current field study delivered an intervention with five reality-based scenarios to n=25 (7 female) experienced police officers training to become managers. After completing psychosocial scales measuring posttraumatic stress injury (PTSI) symptoms including depression, anxiety, and occupational stress, participants were taught to use adaptive meta-cognitive skills (including respiratory techniques to increase parasympathetic activity) during scenarios that were designed to elicit organizational stress and represent a variety of situations typically faced by police managers (i.e., conflict resolution, delivering negative feedback, critical incident command (CIC)). Physiological outcomes include resting heart rate (HR), maximum HR before and during scenarios, and recovery time from max to rest after scenarios to objectively measure resilience.

Results: Despite not engaging in significant physical or aerobic activity, all scenarios elicited significant HR increases and significant anticipatory stress for some (i.e., before entering task room) ($p$adj<0.003). However, sex was not a significant covariate for these changes. Females self-reported higher anxiety symptom scores compared to males (p = 0.029) and predicted that the final live CIC task would be more

stressful and difficult compared to males (p = 0.004, 0.048) as reflected by pre-scenario ratings. Although participants were taught adaptive recovery techniques, many officers did not return to resting HR before the end of data collection. Recovery times also varied greatly between participants and was significantly longer for females following an "arriving late to a heated meeting" task (p = 0.036).

Conclusions: The current research provides novel evidence on the physiological impact of organizational stress in a variety of police management contexts, which has implications for managers in other PSP and professional sectors. Further, females experience greater subjective and objective stress as reflected by objective and subjective measures, compared to females, which may impact performance. These and other sex- and gender-based differences should be explored in future research.

MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

2E01: Developing and piloting the Autonomic Modulation Training intervention: Building wellness capacity among police exposed to post-traumatic stress injuries

Di Nota, Paula, PhD[1]; Scott, Sarah, HBSc[1]; Arpaia, Joseph, MD[2]; Cloutier, Tina, BComm[3]; McGregor, Carolyn, PhD[3, 4]; Andersen, Judith, PhD[1, 5]

[1]*University of Toronto Mississauga;* [2]*Private practice;* [3]*Ontario Tech University;* [4]*University of Technology Sydney;* [5]*AMT Principal Investigator*

Program/Intervention Description: Traditional psychological interventions aimed at building resilience and reducing posttraumatic stress injuries (PTSI) among police and other public safety personnel (PSP) have not adequately addressed the physiological mechanisms that underlie PTSI. Funded by a CIHR priority grant and based on clinically validated protocols, Autonomic Modulation Training (AMT) is a 6-week online intervention that trains adaptive motor and cognitive coping skills using heart rate variability biofeedback (HRVBF). AMT Objectives include: O1) reducing self-reported symptoms of PTSI, O2) strengthening physiological resilience and wellness capacity, and O3) exploring how sex and gender are related to baseline differences in O1 and O2, and response to the AMT intervention. The current presentation will highlight Phase 1: AMT development and available data from Phase 2: testing the efficacy of AMT in meeting the stated Objectives.

Evaluation Methods: During Phase 1, AMT content was developed in conjunction with an international Scientific Advisory Board of clinical and academic experts in HRVBF and experienced Knowledge Users (i.e., police practitioners, wellness coordinators, and stress management instructors).

Educational frameworks for technology-enhanced learning environments were adopted to create and present content that was informative, engaging, and relevant to the occupational perspectives of police. Recruitment for a Phase 2 cluster randomized control trial began in January 2023. Eligible participants include frontline (i.e., no managers, supervisors) active-duty officers from Canadian police agencies. Outcome measures completed during pre- and post-intervention assessments include self-reported PTSI symptoms, coping, functional wellness, and occupational and gender role stress. Physiological resilience is operationalized by resting HR, HRV, and heart rate fragmentation (HRF) during periods of restful and paced breathing and in response to psychologically arousing (but not traumatizing) tasks.

Results: At the time of abstract submission, Phase 1 was complete and n=6 participants were actively enrolled in AMT. Preliminary findings on the available data from an initial pilot cohort (targeted n=30) will be presented, including changes in baseline rates of stated outcomes following the AMT intervention, and the impact of sex and gender on baseline and post-intervention outcomes.

Conclusions: There is an urgent need to provide police and PSP with effective training that improves physical and psychological functioning. Given that help-seeking for PTSI is reduced among these occupational groups, AMT is a promising intervention that can be completed in the privacy of one's home. Importantly, AMT is a novel program that uniquely addresses the underlying physiological mechanisms that support resilience and wellness promotion and is tailored to the occupational demands of PSP.

3B04: Physiological arousal in response to organizational stress among police managers

Di Nota, Paula, PhD[1]; Scott, Sarah, HBSc[1]; Huhta, Juha-Matti, MEd[2,3]; Gustafsberg, Harri, PhD[2]; Andersen, Judith, PhD[1]

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Introduction: Increased rates of physical and psychological disorders in police and other public safety personnel (PSP) have been linked to operational (i.e., content-related aspects of work: critical incidents, shiftwork) and organizational (i.e., context-related factors: available resources, interpersonal relations) stressors. Most applied police research focuses on operational contexts, including evidence-based wellness interventions aimed at reducing posttraumatic stress injuries (PTSIs) and conditioning adaptive physiological stress responses. However, effective training approaches that simulate organizational stressors in police remain understudied. The current study aimed to develop reality-based scenarios that: a) reflect representative workplace scenarios among police managers, and b) elicit physiological responses to organizational stress.

Methods: Using a cross-sectional study design, we sampled n=25 experienced police officers training to become managers at the Police University College of Finland. Participants completed five computer- and reality-based scenarios developed with expert police instructors and that required leadership skills and competencies, including: resolving a heated conflict between colleagues, delivering negative feedback to a subordinate, addressing a superior in front of one's peers, coordinating responses during simulated critical incidents. Psychological outcomes include: self-reported PTSI symptoms of depression, anxiety, posttraumatic stress disorder, alcohol use disorder, and operational and organizational stress. Biological outcomes included: resting heart rate (HR), maximum HR before (i.e., anticipatory stress), during (i.e., organizational stress), and after (i.e., debriefing) scenarios, and post-scenario recovery time as an index of physiological resilience. Depending on normality criteria, paired samples t or Wilcoxon Signed Rank tests were used to determine whether scenarios elicited significant autonomic arousal compared to rest. The direction and strength of associations among all outcomes were explored using Spearman correlations, and all analyses were corrected for multiple comparisons.

Results: Max HR was significantly higher during and in anticipation of all scenarios (ps < 0.002) and approaching significance during post-scenario debriefing (p=0.053), which was faster among more experienced officers (p=0.029). Many officers did not recover to resting HR after the scenarios. Self-reported organizational stress and PTSI symptoms were not significantly related to physiological outcomes. Consistent with prior literature, PTSI scores were positively correlated (ps<0.03).

Conclusions: We demonstrate significant physiological arousal during and in anticipation of simulated incidents typical of police managers that, despite a lack of overt physical activity, are similar to levels observed during operational training and field tasks. The current findings bear significant implications for how stress and health are measured and understood in organizational contexts for police and other PSP, including discrepancies in subjective and objective outcomes.

Poster Presentations

P115: Heart rate fragmentation as a biomarker for mental health among police and adults in a non-clinical setting

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Introduction: Heart rate variability (HRV) is a popular biomarker used in psychophysiological research and biofeedback, with established associations to mental health and cognition (Ottaviani, 2018). However, known confounding variables—particularly respiration—impact HRV interpretation (Hayano & Yuda, 2019), limiting the

accuracy and interpretation of common HRV metrics such as root mean square of successive differences (RMSSD) and standard deviation of NN intervals (SDNN). Furthermore, this poses additional issues in field research for public safety personnel which often involves respiratory interventions or those that involve participant movement, emphasizing the need to explore new field-ready biomarkers. Heart rate fragmentation (HRF) is an emerging measure in psychophysiological research believed to be less influenced by respiration and movement. HRF is defined as increased density of HR acceleration sign changes, with higher fragmentation indicating the breakdown of regulatory control networks involved in heart rate dynamics and negative cardiovascular health outcomes (Costa et al., 2017;2018). The current study explores associations between symbolically dynamic HRF as a field-ready biomarker for probable mental health symptoms in a nonclinical student sample, and a sample of public safety personnel (police).

Methods: Frontline police officers and a nonclinical general population sample completed self-reported mental health inventories for posttraumatic stress (PCL-5), depression and anxiety (DASS-21) symptoms. A heart rate (HR) sub-measure (RR intervals) was measured using commercial-grade HR chest band during a neutral baseline and a stressful task (emotional stroop – in progress). Artifacts were corrected in Kubios using a low (0.35s) threshold level (≥5% corrected data were excluded). HRF derived from RR intervals were symbolically mapped to emphasize acceleration signs and dynamical pattern signatures while deemphasizing the magnitude of those changes (Costa et al., 2017).

Results: A Wilcoxon-Mann-Whitney test revealed that individuals in the general population with above threshold mental health symptoms (respective to inventory criteria) have more baseline fragmentation in comparison to subthreshold-scoring individuals (w=312, p=0.042). RMSSD and SDNN did not significantly differ between threshold and subthreshold-scoring individuals. Comparative analyses of general population to police officers and their associations with the applied stress task will be analyzed.

Conclusions: The results support future HRF consideration in biofeedback and mental health research. Further exploratory analyses comparing HRF to RMSSD, SDNN, and mental health severity will be discussed. Results from this study may inform the use of HR biomarkers in applied occupational field settings via accessible, commercial HR bands. Furthermore, implications of research have application in training, monitoring, and interventions for first responder health and wellness.

P117: The PeerOnCall technology balancing act: managing competing tensions

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Introduction: Peer support has emerged as a potentially effective mode of self-help seeking in public safety personnel (PSP). Given the organizational and occupational nuances of public safety work, a technical solution that promotes a private, secure and reliable connection between peers seeking help and peer supporters is apposite. Through a co-design process that emphasized the needs of frontline Canadian PSP as paramount, the prototype PeerOnCall and PeerOnCall Support apps were developed as a technical solution. In preparation for scaling up, implementing and pilot testing the app in PSP organizations supporting public safety communicators, correctional workers, paramedics and firefighters across Canada, we sought to explore the tensions that emerged in a design process that had to balance the needs of the PSP community with the capabilities of technology to meet these needs.

Methods: We followed an iterative co-design approach, including PSP from each participating public safety sector, peer supporters, implementation scientists, technology researchers and developers, and other key stakeholders. Using the app in simulated scenarios, including technological and functional testing and synthetic peer support connections, we documented challenges and experiences with the app, harmonized these challenges and experiences into technical design criteria, revised the technology platform, and repeated the process.

Results: Competing tensions between perceptions of privacy and security versus technical capabilities (e.g., anonymous calling) and practical requirements of managing risk consistently emerged through the process. Scaling the app to support more users created unique challenges with requirements to support users in diverse geographical regions (e.g., provinces and territories, remote and rural locations) and in diverse organizational settings (e.g., large versus small centres with varied infrastructure for peer support?). Additionally, technical infrastructure and capacity variations (e.g., app capacity, firewalls, wifi-calling requirements) complicated the necessary technical design specifications (e.g., Voice over Internet Protocol).

Conclusions: Understanding the potentially conflicting and competing tensions between user and use-case needs and technological capabilities can help others who are looking to use the PeerOnCall app, as well as those looking to develop technological solutions with PSP and similar groups. For example, balancing a truly anonymous system against the potential need of revealing a peer's contact information in situations of potential self-harm can raise significant and contradictory applied and technical considerations that cannot easily be resolved.

P120: Participant and Stakeholder Experiences of a Workplace Reintegration Program for Public Safety Personnel with Operational Stress Injuries

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Introduction: Public safety personnel (PSP) are at risk of experiencing operational stress injuries (OSIs). The functional impairments caused by OSIs can contribute to challenges with returning to pre-injury operational requirements. A Canadian municipal policing agency developed a peer-led workplace reintegration program (RP) to assist PSP in their return-to-work after an illness or injury. Although this RP has been used nationally and internationally, there is a paucity of research regarding this initiative and its implementation by PSP organizations. The perspectives of PSP participants of the RP and those key stakeholders engaged in the program are important for capturing the current state of the RP, its potential effectiveness, and, if indicated, future directions for the research, advocacy, implementation, sustainability, and spread of the RP. The purpose of this active study is to explore the experiences and perspectives of PSP engaged in the RP, and key stakeholders engaged in the creation, implementation, facilitation, and execution of a RP in Alberta, Canada.

Methods: Interviews with PSP engaged in the RP (n=12) and focus groups involving key stakeholders (n=30) from five PSP organizations (municipal police services (n=2), fire service (n=1), national police service (n=1), and emergency medical service (n=1)) with RPs were utilized using a community-engaged research approach. This qualitative data was transcribed and thematically analyzed to uncover main themes. Demographic data was also collected via online questionnaires.

Results: PSP RP participants felt positively regarding the effectiveness of the program, and themes around a tailored approach to reintegration as well as the benefits of peer involvement are emerging in the data. Three of the five involved organizations had implemented both the short-term critical incident and long-term streams of their RP. Four key themes emerged from the key stakeholders: (1) Integral elements of success, (2) Integral needs, (3) Key areas of growth, and (4) Evolution of the Program. It was observed that the implementation of the RPs were often considered after a mental health crisis within the respective organizations. Recommendations included facilitating strong organizational buy-in from the top down, appropriate workload and hiring practices for RP facilitators, development of strong communication policies, plans, and practices, and additional research focusing on the efficacy and effectiveness of the RP in domains specific to reintegration success.

Conclusions: While RPs are highly regarded by the PSP participants and key stakeholders alike, it is essential that evidence-based research guides the evaluation, modification, implementation, spread, and scale of RPs globally.

SERVING MEMBERS / PERSONNEL MILITAIRE

HEALTH POLICY

Podium Presentations

1A01: Defence Team Perceptions of Organizational Culture and the Impact on Well-Being

Chamberland, Justin, PhD[1]**;** Skomorovsky, Alla, PhD[1]; Laplante, Joelle, PhD[1]

[1]Departement of National Defence

Introduction: Chief Professional Conduct and Culture (CPCC) mandates culture change efforts that aim to ensure the organization culture meets professional standards and promotes a healthy work environment. A positive organizational culture is important because scientific literature has demonstrated that a healthy work environment is linked to various organizational outcomes, including workplace well-being and retention of personnel, in line with the Defence Team (DT) Total Health and Wellness Strategy (THWS). Therefore, the current study explored the perceptions of organizational culture and workplace psychosocial factors that are often associated with a healthy work environment, and their relationships with DT individual well-being and organizational outcomes.

Methods: The 'Your Say Matters: Defence Team Well-Being Survey' was administered in 2022 to assess a broad range of work and organizational factors related to well-being, organizational culture, and retention. DT members' perceptions of the organizational culture (e.g., organizational group climate, ethical culture, and masculinity culture) and factors that contribute to its culture (e.g., relatedness, team psychological safety, organizational fairness) were therefore assessed and compared across socio-demographic factors (i.e., component, gender, and rank). Finally, organizational culture factors were assessed in relation to individual well-being (i.e., burnout and psychological distress) and organizational outcomes (i.e., job engagement, job satisfaction, affective commitment, and leave intentions).

Results: Overall, the majority of the defence team reported a positive organizational climate and about half reported an ethical culture. In addition, a majority feel a sense of relatedness and about half feel psychologically safe with their team. Although all the current workplace factors were associated with the individual well-being and organizational outcomes, the strongest associations were observed with organizational group climate, team psychological safety, relatedness, and decision-making fairness. However, differences were observed across perceptions of these workplace factors, with more negative perceptions generally reported by Regular Force members than Department of National Defence public servants. More negative perceptions were also reported by junior non-commissioned members.

Conclusions: Consistent with the mandates of the CPCC and THWS, the current study demonstrates the importance of a healthy workplace environment in ensuring the well-being of the DT. More specifically, it highlights the benefits of organizational group climate, team psychological safety, relatedness, and decision-making process fairness. It is, therefore, recommended that leaders continue to improve these workplace environment factors. As demonstrated in the current findings, this would be expected to improve job satisfaction and affective commitment, and reduce burnout, psychological distress, and leave intentions.

1A04: Unique Experiences of Primary Reserve Force members: Implications for organizational outcomes

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[1]Department of National Defence

Introduction: The military can be a demanding and stressful environment that can negatively impact important individual and organizational outcomes, including increased burnout and leave intentions. However, existing research into well-being and organizational outcomes has mostly focused on the Regular Force members. As Primary Reserve (P Res) members have unique roles and challenges (e.g., class of service, civilian obligations) within the military, there is evidence to suggest that work-related stressors may affect P Res members differently. Nevertheless, it is unclear if the unique challenges experienced by the P Res members would influence well-being and other individual and organizational outcomes.

Methods: The 2022 Your Say Matters: Defence Team Well-Being Survey assessed a broad range of work and organizational factors related to well-being, organizational culture, and retention. The present study aims to explore and understand the roles of Canadian Armed Forces (CAF) P Res-specific challenges (i.e., class of service, civilian obligations) and their relationships with three individual and organizational outcomes (i.e., burnout, affective commitment, and retention) within the current P Res sample (n=1,323).

Results: Among CAF P Res members, the majority (82%) reported a sense of affective commitment to the organization, less than half (46%) reported burnout, and about a tenth (11%) reported intentions to leave the CAF within the next 3 years. However, when taking P Res-specific variables into account, burnout was reported by over half of full-time service members (59%) and those with civilian obligations (52%); and less than three-quarters (72%) of full-time service members reported a sense of affective commitment to the organization. Proportion of P Res members reporting a sense of affective commitment to the organization increased when taking into account civilian obligations, whereas leave intentions were comparable even after accounting for class of service

and civilian obligations. Preliminary results also indicated that work-life conflict, role ambiguity, and role conflict were associated with lower levels of affective commitment, and higher levels of burnout and leave intentions. Further, higher affective commitment to the organization and lower burnout were significantly associated with leave intentions.

Conclusions: Preliminary analyses suggest that class of service and civilian obligations, among other factors, play a role in individual and organizational outcomes, such as burnout and high affective commitment to the organization. These findings highlight the importance of taking class of service into consideration and will help to inform CAF P Res-specific programs and strategies with the aim to maintain and improve P Res members' overall well-being and retention.

Poster Presentations

P129: Quantitative Assessment of Injectable Medication Delivery Practices

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Introduction: The intent of this study is to understand the efficiency of injectable medication. The outcome from this work could improve the safety and efficacy of emergency medical services, by developing medication delivery devices that will reduce physical carrying load, improve response time for life-saving interventions, as well as improve the comfort and safety of injectable medications for end users. Specifically, we aim to determine the efficiency of medication injection when comparing various strategies (ie autoinjector, prefilled and standard injection platforms).

Methods: Between April and June 2022, 30 participants completed the study. Inclusion criteria consisted of non-healthcare professionals, including males and females between the age of 18-60, with no experience with medication injection during the last 2 years. 30 participants were asked to inject 'medication' that mimicked three different methods of injection: 1) autoinjectors, 2) prefilled syringes, and 3) traditional standard syringes using clinical scenarios. Three variables that were measured in the study were: the time required to complete the injection, the perceived difficulties, and the participant's performance errors. At the end of the experiment, participants were asked how difficult they found each method. The order of administration for each scenario and injection type was randomized to exclude any bias.

Results: Thirty participants were enrolled and completed the study. Participants were mostly women (70%), their mean age

was 35.8 (± 16.9) years, and 93% were right-handed. When medications were administered via autoinjectors, it was 3.53 and 14.71 seconds faster than the prefilled and standard syringes, respectively. Administration of prefilled syringes were 11.72 seconds faster than the standard syringes. Perceived difficulty of injection was significantly lower for the autoinjector compared to standard and prefilled syringes, and prefilled syringes when compared to standard syringes. Error rates were comparable in all three methods.

Conclusions: Autoinjector devices have proven to be significantly more efficient in comparison to prefilled and current traditional methods of medication administration. Prefilled methods have also shown efficiency benefits over drawing from vials and syringes in this trial. This project could potentially improve the quality of pre-hospital care in medical emergencies. Further work to control confounders, reported outcomes, and limitations will be required to fully determine the utility of using prefilled devices in medical emergencies, such as anaphylaxis, overdosing, and uncontrolled bleeding. To our knowledge, this is the first study to quantify the gain of efficiency when comparing autoinjectors to other methods of medication administration, like prefilled syringes or drawing medication from vials for administration.

P138: Canadian Armed Forces Physiotherapy Officer Mentorship Program and Evaluation

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Program/Intervention Description: Physiotherapy Officers (PTOs) serve both a clinical and administrative function: they are the musculoskeletal injury specialists for Health Services and also manage the provision of care by Physical Rehabilitation Sections. In addition to being effective clinicians, PTOs must also be able administrators; however, there is no formal training beyond the Basic Officer Qualification phase to support this requirement. A formal, structured, and individualized PTO mentorship program is being implemented, which will provide a mechanism by which senior PTOs support and improve junior PTOs' clinical and administrative development. The aim of this mentoring program is to clinically prepare PTOs for deployment and ensure they are confident in their management of the provision of physical rehabilitation care. This is expected to lead to improved satisfaction and retention of experienced PTOs, which will in turn facilitate effective care management and ultimately benefit the patient population.

Evaluation Methods: Mentors will annually evaluate individual mentees (approximately 40 PTOs) both clinically and administratively, using chart audit (objective weighting

form scored out of 100) and clinic audit (36 assessment points scored Yes/No), respectively, as the primary outcome measures. Secondary outcome measures include the achievement of agreed-upon mentoring goals (specific to mentee with Yes/No score), the frequency and duration of mentoring interactions (tracked by the mentor for each mentee), Program Evaluation Surveys (completed by all mentees; 7 questions on a 5-point Likert scale with qualitative comments), with results provided to Physical Rehabilitation HQ. Phys Rehab HQ will analyze all outcome measures annually post fiscal year end as a mixed methods longitudinal study for program evaluation.

Results: It is expected that each PTO will benefit from a more senior officer delivering an individualized mentorship program, with chart and clinic audit scores initially increasing then remaining high. It is also anticipated that PTOs will profit from acting as mentors to the junior PTOs within their Areas of Operation. Nationally averaged chart and clinic audit results as well as frequency and duration of mentorship interactions are anticipated to improve annually. A Program Evaluation Survey average of greater than 75%, and subsequently improved PTO satisfaction and effectiveness are also expected.

Conclusions: A structured, individualized mentorship program is being implemented within the PTO MOSID. It is expected to lead to increased clinical confidence, especially in deployed settings, and improved confidence and performance in the management of physical rehabilitation care.

HEALTH SERVICES

Podium Presentations

2A05: Periodic Health Assessment and Cancer Screening in the Regular Forces Personnel: Findings from the 2019 Canadian Armed Forces Health Survey

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Introduction: Routine health assessment and screening help earlier detection of diseases. The Canadian Armed Forces (CAF) has a comprehensive Periodic Health Assessment (PHA) program, which ensures CAF personnel are medically fit for military duties. Regular Force personnel are required to complete a PHA every five years for those under the age of 40, and every two years for those aged 40 years and older. Although the CAF lacks formal cancer screening programs, the cervical, breast and colorectal cancer screening tests have been adopted as part of the PHA. To date, there are limited findings available for PHA and cancer screening rates within the CAF. The Canadian Armed Forces Health Survey (CAFHS) is a population-based health survey of the overall health status of CAF personnel. The primary purpose of this analysis was to present the self-reported PHA frequency, and cervical, breast and colorectal cancer screening rates in active Regular Force personnel by respondent characteristics.

Methods: The CAFHS is a voluntary electronic population-based health survey providing a snapshot of the overall health status of CAF personnel. The CAFHS 2019 was administered in collaboration with Statistics Canada from January to June 2019. Results were weighted to the Regular Force population distribution and analyzed to produce stratified frequencies in the form of descriptive tables and figures and regression analyses were conducted to assess relationships of interest.

Results: Overall, 13,065 Regular Force personnel completed the survey. Greater than 95% of the Regular Force personnel less than 40 years old reported having a PHA in the past five years, while 87.1% of those aged 40-49 years and 92.0% of those aged 50 years or older had a PHA in the last two years. The self-reported screening rates for cervical (86.8%), breast (80.9%) and colorectal (66.3%) cancer exceeded the national targets set for the Canadian population of 80%, 70%, and 60%, respectively. More males reported having a fecal occult blood test than females.

Conclusions: Our findings indicated that in 2019 the vast majority of the Regular Force personnel reported having a PHA within the required time window. Self-reported screening rates for cervical, breast and colorectal cancer in the Regular Force were high and exceeded Canadian target rates. However, self-reported rates have been found to overestimate screening compliance. Systematic cancer screening programs with registries and reminders should be considered in the military health system to further improve screening rates.

2B01: Using Cultural Safety and Competency as a Lens to Understand Black, Indigenous, and People of Colour (BIPOC) Canadian Armed Forces (CAF) Members' Experiences Utilizing Health Services

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[1]*Defence Research and Development Canada*

Introduction: A limited amount of research has been conducted looking at the experiences of BIPOC CAF members using health services. In fact, within a Canadian context more generally, it has only been recently that research has specifically focused on BIPOC health, their experiences within the healthcare system, and any challenges they may face accessing care. Coronavirus disease (COVID-19) and racial/ethnic health disparities drew attention to the need for more research focused on BIPOC health, factors related to it, and the experiences of BIPOC within the healthcare system.

The current research sought to better understand the

experiences of BIPOC CAF members using the military healthcare system. Two main perspectives were sought in order to address this research question. First, the perspective of BIPOC CAF members who had used the military healthcare system in the past seven years were ascertained. Consideration of intersectional factors potentially impacting these experiences were noted. Second, in order to obtain a more fulsome understanding of BIPOC experiences within a Canadian military healthcare context, the perspective of individuals working within the system itself, or who were familiar with the system, were sought. In addition, individuals were asked if they had any recommendations they would like to put forth to ensure that BIPOC receive the best possible access and treatment when using the healthcare system.

Methods: Virtual interview and focus group sessions (17 sessions; 24 participants) were conducted with BIPOC CAF members and also with individuals working within the military healthcare system, or with knowledge of the system. Group dynamics were considered when setting up focus group sessions. Also, due to the nature of the research, it was important to set the preconditions for research participants to feel safe discussing their experiences (e.g., via "ground rules" for the sessions).

Individuals participating in the study were asked one of two sets of questions. The first set of questions were for BIPOC CAF members who had used the military healthcare system in the past seven years, while the other set of questions were for individuals working within the military healthcare system itself, or who were familiar with the system.

Results: The coding of data was done via themes that emerged from the interview and focus group sessions.

Conclusions: Intersectional factors were considered when undertaking the data analyses, as well as how the themes emerging from the study related to ones obtained in the literature pertaining to BIPOC health more generally.

3A05: Identifying military cultural competencies in civilian sexual assault support programs serving survivors of military sexual trauma

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Introduction: Military cultural competency is described as the degree that care providers are aware of the unique needs and issues related to military and Veteran populations. Research has shown that providing cultural competence education to those working with this population can positively influence the experience

for those involved. Previous work in Canada about the experiences of health care providers working with families and Veterans has identified that quality of care is increased when there is evidence of military cultural competency. Nonetheless, interactions between civilians working in community-based sexual assault centres (SAC) and members of the military community who seek these services for military sexual trauma (MST) have not yet been explored. For various reasons including lack of trust in the military and limited access, many military members and Veterans chose to seek support in the community in which they reside. The aim of the study was to interview front line service providers in community sexual assault centres to identify military cultural competence, explore existing supports and knowledge, and identify knowledge gaps.

Methods: Qualitative interviews were completed with front line service providers at SAC who had experience working with Canadian military members and/or Veterans. Semi-structured interviews were completed over Zoom following an interview guide. Qualitative content analysis using Framework Analysis approach was implemented, using a thematic framework derived from the Military and Veteran Family Cultural Competency Framework and further refined using relevant literature. Analysis involved inductive, interpretive phenomenology facilitated using MAXQDA data analysis software.

Results: A total of 5 qualitative interviews were completed with SAC staff with a range of experience (3-20+ years) in Alberta, Saskatchewan, and Ontario. Analysis is currently underway. We expect to find gaps in military cultural competence particularly in the areas of cultural knowledge and cultural skills, but also to uncover some innovative best practices.

Conclusions: Interim analysis has identified many strengths among the sample of community SACs when working with clients affected MST, as well as opportunities for learning and growth. Findings of this study can inform the production of military cultural competency resources to assist centres in better serving military populations going forward. This data could also inform the training of SAC staff and inform development of a cultural competency framework for SACs and inform policies and practices. Future work may include a study with military members and Veterans seeking services from SAC.

5A02: Evaluation of the Road to Mental Readiness for Health Services

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[1]Departement of National Defence

Program/Intervention Description: Informed by research

on barriers to accessing both physical and mental health care among Canadian Forces Health Services Personnel (CFHSP), The Road to Mental Readiness (R2MR) developed a training specifically for this group in 2018. The tailored program for CFHSP was developed with the primary goals of 1) increasing knowledge of available resources and mental health skills 2) encouraging access to care when required 3) decreasing stigma surrounding mental health services use. The goal this research is to assess whether this tailored R2MR program achieved its intended goals.

Evaluation Methods: Using a mixed-methods design, all CFHSP who completed the R2MR training were invited to complete an online survey (N = 125). Next a sub-sample of respondents were invited to participate in a semi-structured interview (N = 25). The survey included questions regarding knowledge of existing resources, a skills test of R2MR concepts, and the Inventory of Attitudes toward Seeking Mental Health Services (IASMHS) scale. The interview targeted applicability of skills learned, ease in seeking care, and comfort level providing support to their colleagues.

Results: The survey results suggest that this group is knowledgeable about mental health resources, and mental health skills: over 85% of participants could indicate available resources, and over 60% of participants passed the skills test. IASMHS suggested no significant presence of stigma in the sample.

Qualitative results suggest three distinct workplace environments (WPE): supportive, mental health culture change in the right direction, and unsupportive. Results varied by WPE. Participants in the supportive environment found the training to be the most helpful.

Results suggests gender differences regarding accessing mental health resources, and trust in discussing mental health related topics with colleagues. Results indicate ongoing systemic barriers to applying the course learning, and to seeking care when needed. Common reasons expressed for not accessing care across WPEs were: job demands, not wanting to burden overtasked colleagues, inability to self-advocate, lack of trust in their CoC and the general health care system, and discomfort with seeking care from their own colleagues. This highlights the importance of focusing not just on individual skills but also the critical role of the facilitative environment.

Conclusions: The program has been successful in meeting some of its intended goals, though there are areas where improvements could be made to strengthen the efficacy of the program. Modifications to the curriculum would be most effective in conjunction with systemic changes that would contribute to a facilitative environment.

5C02: Robotic Human Preserving Efforts to Advance Self-Performed Diagnosis and Hemorrhage Control Far-Forward

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Program/Intervention Description: Bleeding to death is the most common yet potentially preventable cause of combat death. Preventing exsanguination is thus the most critical medical battlefield capability. Often the injuries are not complex, but the victim is alone or trapped "beyond a barricade". First responders such as Military Medics also have high fatality rates when they respond to wounded combatants, often becoming "secondary victims", as deliberate targets of enemy strategy. The TeleMentored Ultrasound Supported Medical Interventions (TMUSMI) Research Group from Calgary, Alberta has partnered with National and International Partners including the Southern Alberta Institute of Information Technology (SAIT) and the Arapahoe Sheriff's Office to explore non-human robotic options to providing far-forward hemorrhage control.

Evaluation Methods: TMUSM reviewed critical challenges in far forward combat death and recognized that exsanguination was the primary challenge. TMUSMI thereafter partnered with experts and innovators in robotic hemorrhage control to evaluate both terrestrial and airborne hemorrhage control equipment delivery. Terrestrial investigations involved the controlled evaluation of adapting Bomb Robots to apply hemostatic wound clamps on simulated wound exsanguination simulators.

Results: These studies demonstrated that robots could arrest extremity hemorrhage and suggested this paradigm be immediately adopted by all agencies currently equipped with standard bomb robots. Remotely piloted aerial system (drone) delivery of life-saving equipment was evaluated in conjunction with SAIT. These techniques involved the drone delivery of hand-held ultrasound capabilities which the distant naïve users could recover from the drone and thereafter be remotely mentored by a remote expert to self-image. A follow-up study involved the drone delivery of a STOP-the-BLEED equipment package including a tourniquet, wound clamp, and wound packing materials. After winching down the package into the arms of the victim, the naïve users were remotely guided with informatic technologies to self-resuscitate. These studies demonstrated that drones can easily deliver life-saving technologies, that while not familiar to isolated victims, their use can be remotely telementored.

Conclusions: Most combat casualties die far before advanced

medical care of relatively simple wounds, and thus early heroic far-forward interventions may have immense impact on combat survival rates. However, humans are the most vulnerable element in far-forward resuscitation. TMUSMI has demonstrated that both terrestrial and airborne robotic capabilities can deliver hemostatic adjuncts whose deployment and application can be remotely mentored using simple informatic technologies. Thus urgent refinement and critical evaluation of the human factors of how to most effectively translate these technologies to clinical practice should be conducted.

6C04: Effects of Remote Ischemic Conditioning on Neural Injury and Coagulopathy in Traumatic Brain Injury Patients: Preliminary results from a randomized control trial

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Introduction: Traumatic brain injury (TBI) has significant somatic, psychological, and socio-economic consequences, being one of the leading causes of death and disability in civilian and military trauma cases. Coagulopathy occurs frequently in TBI and is associated with an increased risk of death. Almost half of hospitalized TBI patients require admission to an intensive care unit (ICU) due to risks of secondary brain injuries and related complications. Therefore, management of TBI is currently focused on the prevention of secondary injury that results from brain ischemia. Remote ischemic conditioning (RIC) is a non-invasive intervention that has been shown to lessen ischemia/reperfusion injury and potentially reduce tissue/organ damage. In TBI patients, RIC showed a reduction of neuronal injury markers in blood, neuron-specific enolase (NSE) and S-100 calcium-binding protein B (S100B), while limited evidence supports RIC effects on coagulation and fibrinolysis. We hypothesized that RIC might exert beneficial effects in TBI patients reflected by the profiles of brain injury and coagulo-fibrinolytic biomarkers.

Methods: A randomized double-blinded controlled clinical trial with two arms (sham and RIC) is in progress in TBI ICU patients at St. Michael's Hospital. Patient eligibility criteria include presence of intracranial hematoma on CT scan and Glasgow Coma Scale (GCS) score ≤ 12. RIC involves 4 cycles of 5-min occlusion at 30mmHg>systolic blood pressure, followed by 5-min of deflation on an arm (using a pneumatic tourniquet) within 48h of injury. Plasma biomarkers were measured at 0h (pre-intervention), 4-6, 24, 48 and 72h (post-intervention). Secondary outcome measures included clinical

data and neurocognitive assessments. Currently, the trial has enrolled 43 of 45 patients. Preliminary measurements were conducted on 13/RIC and 15/Sham patients. Neuronal injury (S100B and NSE) and inflammatory markers (HMGB1 and RAGE) were measured by immunoassay (pg/mL) while measurements of blood coagulation factors (fibrinogen and D-dimer) were performed using Stago Compact Max.

Results: RIC significantly lowered levels of neural injury marker S100B (-399 [95% CI: 64 to 734] at 72h, while levels of inflammatory HMGB1 were decreased with marginal significance (P ≤ 0.1) at 48h. RIC did not significantly affect D-dimers but decreased fibrinogen levels at 72h.

Conclusions: RIC demonstrates promising preliminary results in limiting post-injury elevations in S100B in TBI patients. RIC may also reduce inflammation and affect coagulation. Completed results of the ongoing trial will further elucidate the mechanisms and outcome of RIC treatment as a potential novel adjunctive therapy for moderate to severe TBI.

Poster Presentations

P134: Describing trends in medical leave over the course of the COVID-19 pandemic in the Canadian Armed Forces

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[1]*Departement of National Defence*

Introduction: The effects of COVID-19 on the health and wellness of individuals have been well documented throughout the course of the pandemic. However, there is limited evidence regarding its impact on the operational readiness of military members and how this differs compared to other respiratory illnesses in pre-pandemic years. This study examines the effect of COVID-19 infection on the use of sick leave (SL) and return to duty with limitations (RDL) compared to pre-pandemic influenza-like illness (ILI) in the Canadian Armed Forces (CAF).

Methods: The CAF electronic health records were used to identify cases of ILI from 2018-2019, COVID-19 cases from 2020-2021 and medical leave from 2018 to April 1, 2022. Regular Force members eligible for health services with a medical leave note issued within 15 days of an ILI/COVID-19 diagnosis were included. Leave starting within 15 days of the diagnosis was assumed to be attributed to the ILI/COVID-19 infection. Secondary infections occurring within 90 days of the previous infection were excluded. Medical leave duration for notes starting within 5 days of the previous leave was considered as a single consecutive leave. Medical leave was censored at April 1st, 2022. Univariate Poisson and linear regression were used to detect differences in the number of medical leave notes and in the duration of leave over time, respectively.

Results: A total of 5099 infections (2861 ILI and 2238 COVID-19) had either a SL or RDL note following diagnosis. There was a difference in the number of SL notes over time (2018=849; 2019=804; 2020=467; 2021=635; p <0.01), while the duration of SL increased during the pandemic compared to pre-pandemic years (p<0.01). The mean duration of SL was 10.2 (SD12.5) days in 2020 and 15.1 (SD16.9) days in 2021 compared to 5.4 (SD7.7) and 6.2 (SD15.1) days in 2018 and 2019, respectively. Conversely, there was no observed difference in the number of RDL notes issued over time (p=0.79). There was, however, a significant difference in overall RDL duration over time (p=0.003). The mean duration of RDL ranged from 33.5 (SD81.4) days in 2018 to 35.1 (SD59.5) in 2021.

Conclusions: There is a difference in the overall length of medical leave in the pandemic compared to pre-pandemic years. The findings may be due to public health and workplace posture directives requiring individuals to self-isolate or work from home and seek medical attention and leave when illness severity was greater.

P139: Summative Evaluation of The Canadian Forces Health Services Response to the COVID-19 Emergency

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[1]*Canadian Armed Forces Health Services Group*

Introduction: How did Canadian Forces Health Services fare during the first year of the pandemic? Using a standardized approach and qualitative rigour, this summative report, directed by the Surgeon General through Canadian Forces Health Services (CFHS) Quality Council, attempted to answer this question for in-garrison care, deployments and civil authorities responses.

Methods: The researchers used a mixed-method approach and standardized data collection techniques driven by the specific needs for information linked to the key evaluation questions. Health Services' response to the pandemic was assessed through four criteria: effectiveness, efficiency, governance, and incorporation of GBA+ analysis cross-cutting the abovementioned criteria. Representatives (n= 118) and representative documents (n=151) at tactical, operational, and strategic levels for in-garrison, overseas, and long-term care facility responses were interviewed and analyzed, respectively, to obtain data. Added information was ascertained from focus groups (n=206 people) and representative site visits (n=5 clinics).

Several findings (n=28) generated multiple recommendations (n=22) identifying those elements and ideas that should be sustained, improved, or discarded.

Results: CFHS uninterruptedly provided essential mission-critical health services, medical direction and expert advice in support of public health protection and supplied health services forces to Joint Task Forces engaged in current operations in Canada and abroad.

The personal health and safety of Canadian Armed Forces (CAF) personnel were effectively protected, allowing the CAF to maintain operational effectiveness and readiness for missions during the pandemic. In-garrison health services and units rapidly implemented public health measures for infection control and ensured the safe continuity of care provision.

Identified were several factors that impacted the efficiency of the CFHS response to COVID-19, many of these adding to the organizational effort required for CFHS to achieve the successes it did. These included important gaps in planning and preparedness, most notably the lack of a detailed and up-to-date medical CONPLAN and pre-existing human and other resource challenges. Similarly, there were findings related to pre-existing governance structures and processes that impeded CFHS's ability to execute required tasks in the context of the pandemic.

Conclusions: Notwithstanding these handicaps at the outset, the Evaluation found that CFHS personnel at all levels could develop and rapidly institute several innovations and adaptations to meet the multiple challenges and demands they faced. However, while largely effective, these measures were not without considerable cost to the CFHS – particularly at the tactical level. As a result, CFHS should expect substantial challenges in recovering from this extended surge posture.

P150: An Exploration of Patterns in the Treatment of Canadian Armed Forces Members with Posttraumatic Stress Disorder: Preliminary Findings of a Survey of Clinicians

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Introduction: Posttraumatic stress disorder (PTSD), a debilitating disorder which can occur after exposure to a stressful or frightening event, affects a significant number of military members. Given its prevalence and impacts, it is important to provide timely and effective treatment and support. Current treatment guidelines recommend the use of prolonged exposure (PE), cognitive processing therapy (CPT) and eye movement desensitization and reprocessing (EMDR) as first-line psychotherapeutic treatments. Although these have proven efficacy, we have little information on how clinical practice guidelines are applied amongst clinicians who treat Canadian Armed Forces (CAF) members with PTSD, and little understanding of the factors that influence clinicians' decision-making regarding choice of treatment. The objectives of the proposed research are 1) to

explore the patterns of treatment of PTSD across clinicians practicing in CAF mental health clinics, and 2) to understand the factors that influence clinicians' treatment decisions.

Methods: An invitation to complete an electronic survey was sent by email to approximately 400 clinicians employed at CAF mental health clinics. Clinicians were a mix of psychiatrists, psychologists, social workers, mental health nurses, and mental health chaplains. The survey contained questions on clinicians' background and training (e.g., years in practice, profession, theoretical orientation), PTSD caseload, PTSD treatment planning (e.g., use of PTSD assessment tools, client education about treatments, factors important to treatment decision-making), and PTSD treatment delivery (e.g., psychotherapeutic approaches used, pharmacological prescribing practices, barriers to the use of treatments, reasons for prematurely ending treatment, perceived effectiveness of treatments). Questions focused on the use of PE, CPT and EMDR in clinicians' practice.

Results: Data collection is expected to be complete by March 2023. The initial analytical approach will be primarily descriptive in nature (frequencies, proportions), and will be aimed at providing information on clinician characteristics, treatment planning, specific treatments used, most and least important factors considered in decision-making, perceived effectiveness of treatments, reasons for prematurely ending treatment, and barriers to the use of particular treatments.

Conclusions: This study will fill in a gap in our understanding of clinical practice patterns and clinical decision making around choice of PTSD treatment and barriers and facilitators to the use of treatments. The information derived from this study will serve as a foundation for further work that is aimed at optimizing the delivery of evidence-based care by clinicians treating CAF members with PTSD.

PRIMARILY MENTAL HEALTH AND WELL-BEING

Podium Presentations

1A02: Masculinity contest culture in Defence organizations: examining relationships with psychological health and retention

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Introduction: In recent years, media coverage, external reports, and research have highlighted the persistent prevalence of systemic misconduct and negative impact on well-being within the Canadian Armed Forces (CAF). To address socio-cultural issues, it is imperative to better understand underlying dynamics. Masculinity contest culture (MCC) represent organizational contexts in which individuals are often expected to engage in zero-sum competition with rules defined by traditional masculine norms. Organizations that are characterized by high MCC tend to endorse hegemonic norms that place white, heterosexual, class privileged, physically fit and able-bodied men at the top of social networks with all other identities relegated to lower status. Prior research shows that MCC correlate with several negative outcomes, including increased bullying and harassment, turnover intentions, burnout, and reduced well-being. The negatives implications of MCC for both individuals and organizations reinforce the critical need for additional research to explore how MCC might be countered. There has been very limited research examining MCC in Defence organizations and their associations with organization outcomes. This study aims to examine MCC within CAF context and better understand the relationships between MCC and organizational outcomes, namely psychological health and turnover intentions.

Methods: The study is based on secondary analyses of the Your Say Matters: Defence Team Well-Being which was administered to the Defence Team in Spring 2022. Descriptive and correlational analyses were conducted to examine the perceived magnitude of MCC and their relationships with organizational outcomes among a representative sample of Regular Force CAF members (N=4,239).

Results: Among members of Regular Force, 40% reported that the culture is one of negative masculinity. Results of preliminary analyses show a relationship between negative masculinity culture and poorer organizational outcomes. Higher levels of MCC were significantly associated with higher levels of burnout, psychological distress, and leave intentions.

Conclusions: Preliminary findings highlight the role of MCC in well-being and retention. Further analyses will examine the mediating effect of an ethical climate on the relationship between a masculinity contest culture organizational cynicism and toxic leadership and the outcomes of psychological distress and turnover intentions. An intersectional analysis will be applied to better understand these relationships among various sub-groups. Findings will help enhance and inform CAF culture-related initiatives and strategies.

1A03: Well-Being of Regular Force Canadian Armed Forces Members: The Roles of Work-Family Conflict and Organizational Support to Members and Their Families

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Introduction: The military and the family are often described as "greedy" institutions, in that they have competing demands and may cause a work-family conflict among military members. Work-family conflict has been found to be an important contributor not only for organizational outcomes, including job engagement and burnout, but also for military members' psychological health. Although there is evidence that organizational support can be related to better organizational outcomes, there has been limited research examining the role of organizational support to members and families in supporting the well-being of Canadian Armed Forces (CAF) members. Therefore, the aim of the study was to examine the role of work-family conflict and the unique and protective roles of organizational support to members and families in the job engagement, burnout, and well-being of CAF members.

Methods: Three hierarchical regression analyses were conducted, where work-family conflict, family-work conflict, and work-life balance were entered as the first step, organizational support to members and family support were entered as the second step, and the interaction terms were entered as the third step in predicting job engagement, burnout, and psychological distress of Regular Force CAF members ($N = 3,852$).

Results: It was found that work-family and family-work conflicts as well as satisfaction with the work-life balance were predictive of the organizational outcomes and well-being of CAF members. Organizational member support was consistently predictive of all the outcomes, and family support was predictive of job engagement and psychological distress. Finally, family support moderated the path between work-family conflict and burnout and the path between family-work and job engagement, whereas organizational member support moderated the path between life-work conflict and psychological distress.

Conclusions: This study demonstrates the importance of maintaining balance between work and family domains. However, organizational support provided to the member and the family was found to be directly related to better organizational and members' well-being outcomes, and also to buffer the negative impact of the conflict between work and family. Providing support to military members and their families plays an important protective role by mitigating some of the negative impacts of work and family conflicts

on organizational outcomes and members' well-being. It is, therefore, recommended that CAF leaders not only reinforce the importance of work-life balance, but also focus their efforts on providing organizational support to members and families in order to improve the organizational outcomes and well-being among military members.

1B01: Are We Doing Our BEST? Evaluating a Trauma-Informed Sexual Misconduct Training Program for Military Leaders

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Program/Intervention Description: Finding ways to address military sexual trauma (MST) in the Canadian Armed Forces (CAF) is of critical importance given the serious and negative effects of MST on people's mental and physical wellbeing (Atlas Institute, n.d.). Believe, Empower, Support: Together (BEST) is a trauma-informed sexual misconduct training program that was co-developed with people with lived experiences of MST to help CAF leaders learn about MST and its effects, as well as understand how to address sexual misconduct. BEST has not yet been formally evaluated, which is an essential step in demonstrating its effectiveness and fostering ongoing program improvement.

Evaluation Methods: We are undertaking a sequential, explanatory mixed-methods approach to evaluation that will begin with a quantitative strand to understand changes in participants' knowledge, skills, and attitudes towards MST pre- and post-program delivery, followed by a qualitative strand involving semi-structured interviews conducted with a subset of participants to help expand upon findings from the quantitative strand. Specifically, the quantitative strand will involve administering a survey to CAF leaders before and after program participation. The survey will be developed using existing, validated measures of MST knowledge, skills, and attitudes; some locally developed items may also be used. After descriptive analysis of the quantitative data, the findings will be used to generate an interview guide that will be used to understand participants' perspectives in more detail. Thematic analysis will be used to generate themes from the interview data. Following the completion of both strands, we will use mixed-methods matrices to formally integrate the quantitative and qualitative data.

Results: We have collated piloted evaluation data from BEST since Fall 2022 and hope to begin our formal evaluation in Spring 2023. Our preliminary findings suggest that BEST is meeting its goals as a training program, with a few suggested areas for improvement, such as ensuring that participants are

aware of and adequately prepared for the content in advance of the workshop, as well as adding more scenarios / role-playing exercises and time for discussion, integrating BEST content into training for the Sentinel Program, and aiming for greater representation of men who have experienced MST (e.g., as part of the panel).

Conclusions: To ensure that the BEST training program is meeting its learning objectives, it is crucial to formally evaluate the program to generate evidence about its effectiveness that can be shared with participants and other stakeholders and used for ongoing program improvement.

1B02: Digital Platform for Early Intervention and Peer Support for Canadian Military Members with Sexual Trauma: A Pilot Study

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Introduction: The commitment of current and former members of the CAF (Canadian Armed Forces) to defend Canada's interests, as directed by the Government of Canada, is commendable. However, it is regrettable that some have suffered harm due to sexual misconduct in the military. As a result, these members have recently urged the Department of National Defence (DND) to develop a solution to support those who have experienced sexual misconduct or trauma during their military service. This project aims to establish a dependable and supportive community that can assist these individuals in their healing process.

Peer support can be valuable for overcoming barriers to early intervention among members. However, there is a pressing need for an effective tool that can facilitate access to support services. Technology, particularly mobile applications, has emerged as a promising early intervention and support avenue. To explore the potential of these tools, research will investigate their utility in offering support services through various formats and circumstances, including those delivered via electronic and mobile platforms.

This project aims to pilot-test a digital platform designed to promote early intervention, peer support, and counselling. This platform will reduce the risk and impact among the current and former CAF members and DND employee populations.

Methods: The proposed solution consists of two mobile applications, a companion web application, an administration portal, and an API server with a database layer and push notification servers. Anonymous data collected via the applications will inform researchers of usage trends.

Anonymity, confidentiality, and privacy are major design principles. The study design, issues of consent for data collection, and initial feedback will be discussed before data collection begins.

Expected Results: At the current stage of the study, data collection has not yet commenced. We will first discuss the design principles and seek initial feedback before beginning data collection. This will involve addressing ethical issues such as obtaining informed consent from participants and ensuring their privacy is protected throughout the study.

Conclusions: Our study proposes a digital platform to support current and former CAF members and DND employees who have experienced sexual misconduct/trauma during military service. The solution prioritizes anonymity, confidentiality, and privacy and includes two mobile applications, a web application, and an API server. Data collection has not yet started, but ethical issues will be addressed before commencing. The study aims to pilot-test the platform's value to promote early intervention and reduce the risk for its targeted audience.

2A04: Mental Health in the Regular Force: Findings from the 2019 Canadian Armed Forces Health Survey

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[1]*Department of NationalDefence*

Introduction: Mental health comprises emotional, psychological, and social wellbeing and is essential to the wellbeing, productivity, and deployability of the Canadian Armed Forces (CAF). The CAF Health Survey (CAFHS) is a population-based survey providing a snapshot of the overall health status of CAF personnel. The CAFHS mental health section includes personal and work related stress, chronic mental health conditions, suicide, and access to mental health support. The findings presented are for the Regular Force only.

Methods: The CAFHS 2019 was administered electronically in collaboration with Statistics Canada from January to June 2019. Results were weighted to the Regular Force population distribution.

Survey variables were stratified by age, sex, rank, base/wing and analyzed using descriptive statistics, odds ratio, regressions and tests of significance to identify associations at an error threshold of $p<0.05$.
Results: The proportion of the Regular Force reporting a mood disorder (13.3%), anxiety disorder (12.7%), and PTSD (8.3%) increased with age relative to personnel aged 29 years and under. Suicidal ideation (13.4%) decreased with age. The Royal Canadian Air Force (RCAF), Other commands, male personnel, and Jr. and Sr. Officers were less likely to report

mood and anxiety disorders relative to the Army, female, and Jr. NCM personnel. RCAF, Royal Canadian Navy (RCN), Other commands, and Jr. and Sr. Officers were less likely to report Post-Traumatic Stress Disorder (PTSD) while Sr. NCM personnel were more likely to report PTSD. Male personnel and Sr. NCM personnel were significantly more likely to use support services for PTSD relative to female personnel and Jr. NCM personnel, respectively. Anxiety, depression and work-related stress were reasons for accessing mental health care for approximately 50% of the 27.3% respondents who spoke to a health professional about a mental health or substance use issue.

Conclusions: The distribution of chronic mental health conditions and decisions to access mental health support services in the Regular Force varied across command, rank, age, and sex. The likelihood of reporting mood disorders and Post-Traumatic Stress Disorder (PTSD) increased with age, while it decreased for suicidal ideation. Sr. NCM members were significantly more likely to report PTSD and to seek support services to manage PTSD relative to Jr. NCM personnel. Despite a similar PTSD prevalence, male personnel were more likely to access support when compared to female personnel. A higher proportion of Regular Force personnel reported accessing mental health support in 2019 compared to the previous iteration of the survey in 2013/14.

2B02: The Lived Experiences of Black Servicewomen in the United States Army: A Qualitative Study

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Introduction: The US military recently implemented strategies to increase diversity and retention. In the military, women comprise 16.5% (28.9% Black, 54.1% White, and 21.4% Hispanic) of the population. The intersectional experiences of women in the US military is an emerging topic, with more research examining the lived experiences of active-duty women of color. Further, women's experiences in the military are becoming more of a focus, with an increase in women enlisting year after year. With this increase in numbers, women are more likely to feel they do not belong in male-dominated organizations. This study examines Black servicewomen's inclusion and exclusionary experiences in the United States Army.

Methods: Data from a more comprehensive study focused on policy and practices related to diversity and inclusionary leadership in the US Army was utilized. Focus groups and one-to-one interviews were conducted to explore all Soldiers' experiences (men and women) of diversity and inclusion within their units. The team traveled to four Army installations across the United States and conducted nineteen focus groups

and fourteen interviews with 135 active-duty Soldiers. The team performed a thematic analysis to investigate the major themes from the data. The final sample included 35 women, 40% identified as Black.

Results: Fourteen participants were included in the final analysis. The emerging themes included Black servicewomen often referred to the Army as a "Boy's Club" when discussing feelings of exclusion. Frustrations regarding hair standards and the time it takes to be acceptable were discussed. Despite the Army modifying policies to improve inclusivity, many Black servicewomen felt unsettled that the Army would still consider their natural hair "unkempt" or "unprofessional." Black women in the officer rank referred to themselves as "rare" or "unicorns" because there were so few.

Conclusions: The results give insight into how Black servicewomen's military experiences are impacted by the current Army's culture and policies. The women in our sample reported that women of color fulfilled fewer leadership roles, which may deter career progression and the development of more inclusive policies for women of color in the US military. The results from this study can be used to inform policies to improve diversity and inclusion for the US military by implementing policies that consider all workers' needs, especially women and people of color, centered on the lived experiences of this population.

2D06: Advancing the Canadian Military, Veteran, and Family Connected Campus Consortium: Preliminary results

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Introduction: A Canadian Military, Veteran and Family Connected Campus Consortium (CMVF3C) was launched on February 21,2023 to facilitate (1) a coordinated approach to post-secondary educational supports for military members (regular, reservists,rangers), veterans and their families, and (2) collaboration among key stakeholders (military members, veterans, post-secondary institutions (colleges, polytechnics and universities), Canadian Armed Forces, Veterans Affairs Canada, business and industry partners, 3rd party providers etc.) invested in supporting their success. Following speaker remarks and a presentation, participants engaged in facilitated online and in-person discussions on CMVF3C guiding principles, governance, membership, and sustainability

Methods: This qualitative study thematically analyzed data (facilitator and participant notes) collected from the discussions using methodology described by Braun and Clarke (2006).

Results: CMVF3C launch participants included 42 in person attendees, and 60 online participants. Participants were supportive of the draft guiding principles. Development of a strong foundational governance structure was encouraged. Participants encouraged a tiered approach to membership, with the core members being post-secondary institutions (colleges, polytechnics and universities) CAF, VAC and Military Family Services. Sustainability was identified as being critical to the long term success of the initiative. Stakeholder engagement, research and evaluation, knowledge mobilization and sharing of best practices we identified as cornerstones of the initiative.

Conclusions: The evolving CMVF3C and its collaborative and coordinated approach is well-positioned as a national hub to bring together key stakeholders (military members, veterans, post-secondary institutions (colleges, polytechnics and universities), Canadian Armed Forces, Veterans Affairs Canada, business and industry partners, 3rd party providers etc.) in support of the success of military member, veterans and their families, as well as recruitment, retention, reconstitution and transition.

3A02: Understanding men's experiences of accessing and using supports for military sexual trauma: A scoping review

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Introduction: Although military sexual trauma (MST) is often framed as a "women's issue," men also experience MST. A study of United States Veterans revealed that 4.8% of men were victims of MST and likely higher given the stigma attached to men's reporting of MST. Those affected are at a higher risk for adverse outcomes, including mental health and somatic problems, emphasizing the need for supports and prevention. Given underreporting and stigma, little is known about men's experiences of accessing and using supports following MST. The objective of this scoping review was to identify and review what is known in the literature about men's experiences of programs and support services to address their experiences of MST.

Methods: Arksey and O'Malley's framework was used for conducting a scoping review to answer the following question "What are men's experiences with accessing and using programs and support services to address their experiences of sexual violence as adults, particularly during military service?" Five databases (MEDLINE, EMBASE, Web of Science, PsycINFO, and CINAHL) were searched. Peer-reviewed, English language articles, published from the Five Eyes nations from 1995 onwards were included.

Results: Fourteen articles were included in the final review, all published in the United States. A range of article types were reviewed, including research articles and perspectives (later pulled out in hand searches) that were published between 2008 and 2022. Most articles described barriers faced by men when seeking supports for MST, including mistrust in the reporting system, rape myths, hypermasculization of military culture, and lack of knowledge of existing supports. There were some factors described in the literature that facilitated access and use such as demonstration of military cultural competency from organizations and providers, and men-specific resources aimed at military members and Veterans.

Conclusions: This review highlights the lack of attention on men who have experienced MST. More revealing is that research in this area has exclusively been led by a small team of researchers in the United States, thus limiting transferability to men who have experienced MST in Canada. Although much can be learned from the existing research on men and sexual trauma during adulthood, the unique circumstances created by this trauma occurring within the military culture emphasizes the need for dedicated research and, in turn, policies and processes to address the unique challenges faced by men.

3A03: A Scoping Review of Military Sexual Trauma and Members of the 2SLGBTQIA+ Community

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Introduction: Justice Deschamps described aspects of Canadian military culture as being overly sexualized and hostile towards certain service members, particularlyLesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) personnel. They face morediscriminatory and sexually aggressive behaviour than other military populationsincluding increased rates of Military Sexual Trauma (MST).MST includes sexual assault, harassment, or any unwanted sexual behaviour that occurs during military service.Currently, the relation between 2SLGBTQIA+ (Two-Spirit, Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, Intersex, Asexual and other identities) military membership and MST is poorly understood. By exploring the literature's breadth and depth, the present scoping review examines and outlines what is known.

Methods: Using the Arksey and O'Malley scoping review method, we explored the research question: "How does the literature describe the experiences of 2SLGBTQIA+ military members and Veterans who have experienced military sexual trauma?" Peer-reviewed research articles, reviews, and perspective papers were selected from a range of databases (e.g., Embase, CINAHL, MEDLINE, etc.). A total of 905 papers

were identified, with 33 meeting review criteria. Search terms reflected military population membership (e.g., navy), 2SLGBTQIA+ identity (e.g., transgender), and MST (e.g., sexual assault). Selected articles were English-language-based articles written between 1990-to-2022 in Five Eyes nations. Papers were independently screened by four team members using Covidence (systematic review software) and then collated using MAXQDA (qualitative data analysis software) to summarize key issues/themes.

Results: Anticipated results include factors implicating how 2SLGBTQIA+ military members experience MST, including the impact of identity (e.g., gender, orientation), significant historical events (e.g., LGBT Purge), family (e.g., need for 2SLGBTQIA+ friendly supports), and health care barriers (e.g., stigma). Gaps in knowledge could include specific treatment recommendations (e.g., for transgender personnel), research on intersecting identity factors, non-discriminatory policy development/enforcement, and guidance for leadership.

Conclusions: There is a paucity of research surrounding the relationship between experiences of MST and 2SLGBTQIA+ personnel in the Canadian military. This scoping review explores and consolidates current literature that may help inform future research initiatives, policy development, and creation of programs to better support 2SLGBTQIA+ service members and Veterans who have experienced MST in their service to Canada.

3B06: Adjustment Disorder in the United Kingdom Military: Prevalence and associated factors among United Kingdom military personnel, veterans, and Reserves

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Introduction: Adjustment disorder (AjD) is frequently reported as the most diagnosed mental disorder in the UK Armed Forces alongside depressive episode, however, little research has been conducted exploring AjD within the UK military. The current study aimed to report probable AjD prevalence estimates for the UK military population and investigated whether probable AjD stressors outlined in the general population are applicable to the UK military. The study also aimed to investigate sub-types of childhood adversities associated with probable AjD and to examine differences between risk factors and stressors of probable AjD for varying military engagement/serving statuses.

Methods: Data from the King's Centre for Military Health Research (KCMHR) health and wellbeing cohort study were employed. The study collected data across three phases to investigate the health and wellbeing outcomes of military

personnel who served in Iraq and Afghanistan. Using this data, prevalence estimates, risk factors and common stressors for probable AjD were compared to controls (N = 5,128). The analysis was then stratified by engagement/serving status: Regulars (N = 1,999), ex-Regulars (N = 2,061), and Reservists (N = 596).

Results: A weighted probable AjD prevalence estimate of 6.8% was found (95% CI: 6.0% – 7.7%, N = 333). Significantly more ex-Regulars met the cut-off score for probable AjD when compared to Regulars. A similar significant outcome was found for Reserves (current and ex-Reserves) when compared to Regulars. Using logistic regression, relationship dissatisfaction (OR: 7.13, 95% CI: 4.36 – 11.67), financial difficulties (OR: 6.29, 95% CI: 4.65 – 8.50), and adverse events of a loved one (OR: 2.92, 95% CI: 2.17 – 3.93) were associated with probable AjD. Childhood externalised behaviours had an increased association with probable AjD (OR: 2.71, 95% CI: 2.03 – 3.60) compared to family childhood adversities (OR: 1.74, 95% CI: 1.30 – 2.33), but both were associated.

Conclusions: The findings provide a foundational profile of AjD for the UK military population. The results indicated that Reserves had a higher probable AjD prevalence estimate compared to Regulars and ex-Regulars. Several stressors and risk factors of AjD were reflective of those found in the general population however, further exploration of military-specific stressors is necessary. Given that AjD is amongst the most common diagnosis made in the military population, and the potential impact AjD may have on personnel's capacity to safely carry out critical tasks safely, further work on this topic should be prioritised.

3E05: Cultural Barriers to Employment Equity as a Social Determinant of Health for Designated Group Members in the Canadian Armed Forces

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Introduction: Discrimination is an important social determinant of a wide range of health indicators (see Paradies et al., 2015). The Canadian Armed Forces Employment Systems Review (CAF ESR) investigates the CAF workforce to identify systemic employment barriers for Designated Groups Members (DGMs) in the CAF (women, Indigenous Peoples, visible minorities, persons with disabilities, and 2SLGBTQI+ members). The current presentation will focus on CAF members' perceptions of CAF culture with respect to diversity, inclusion, and employment equity, and whether aspects of the CAF culture represent employment barriers that lead to discrimination against DGMs. Data collection for this phase of the project is complete, and preliminary analysis is underway.

Methods: Data was collected via an online survey that

included a series of open-ended questions designed to elicit information about how the CAF (as an organization and individual members) views employment equity, and to investigate the treatment of DGMs in the CAF. The survey was distributed to CAF members in a supervisory role, as well as subject matter experts in the areas of recruitment, training, career development, and employment equity. Thematic content analysis will be conducted to identify employment barriers for DGMs related to CAF culture.

Results: The available results are preliminary. Many CAF members hold positive views about how the CAF ensures inclusivity for DGMs (e.g., easily accessible accommodation). Despite these positive perceptions, many CAF members also identified fear as a reaction to the sense of non-inclusiveness of the CAF culture (e.g., fear of discrimination/career repercussions, fear of not conforming). Underscoring where this fear may stem from, some members express frustration with the CAF's efforts to be a more inclusive workplace (e.g., treatment of DGMs has resulted in fewer opportunities for other CAF members) and feel the CAF should employ an organizational system based solely on merit.

Conclusions: While many CAF members hold positive views about the inclusiveness of the CAF, a number of CAF members also identified factors that may undermine the elimination of cultural barriers that facilitate discrimination against DGMs in the CAF. Minority groups – including DGMs - are already at an increased risk of adverse health effects due to social inequity (Raphael, 2016). The goal of the CAF ESR is to investigate employment barriers that may contribute to these social inequalities, and thus contribute to the health of CAF members. This study highlights how CAF culture contributes to such social inequalities in the form of employment barriers in the CAF.

4C01: Measuring Moral Distress and Moral Injury: A Systematic Review and Content Analysis of Existing Scales

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Introduction: Moral injury (MI) and moral distress (MD) are two related constructs referring to the consequences of experiences that violate moral beliefs. *MI* (the lasting bio-psycho-social-spiritual impact of perpetrating, failing to prevent, or bearing witness to acts that transgress deeply held moral beliefs and expectations; Litz et al., 2009) is a term chiefly derived from the military mental health literature. *MD* (the perceived violation of professional integrity and the concurrent feeling of being constrained from taking the ethically appropriate action; Epstein and Hamric, 2009), is a term chiefly derived from the healthcare literature. Due to the proliferation of research on moral stressors and their consequences, these constructs are becoming increasingly confounded, impacting the development and quality of scales purporting to measure these phenomena. Given the pressing need to address MI/MD in occupational settings, clarity regarding proper measurement is urgently needed. This study 1) examines the quality and theoretical basis of existing measures of MI/MD; 2) clarifies specific outcomes measured by each instrument; and 3) provides recommendations for measuring MI/MD in clinical, research, and occupational settings.

Methods: We conducted a systematic review summarizing and evaluating the quality of existing MI/MD measures. We searched multiple databases, identifying psychometric studies describing the development or validation of MI/MD measures. We extracted information on construct validity, measurement model, structural validity, internal consistency, reliability, cross-cultural validity, and convergent/divergent validity for each scale. We then conducted a content analysis of scale items to identify specific themes captured by each.

Results: The final sample was 74 studies representing 34 unique scales, 9 of which have been tested among military and public safety personnel (PSP). Most studies showed strong construct validity, however convergent/divergent validity was often doubtful or inadequate. The quality and appropriateness of psychometric approaches varied greatly across studies. Content analysis showed 23 scales measure exposure to both moral stressors and outcomes, 7 measure outcomes only and 2 measure exposure only (missing=1, scale items unavailale). Most scales using the term MD describe general distress, whereas measures using the term MI are more detailed, capturing themes like mistrust, shame, anger, spiritual distress, and betrayal.

Conclusions: Results provide valuable information as to how the constructs MI/MD are being measured, and provide an important resource for those seeking to measure MI/MD. Major limitations of this literature, including incorrect application of psychometric approach, were identified and

warrant further scrutiny. Recommendations for the use of specific scales in specific settings, including among military and PSP, are discussed.

4C03: The clinical utility of a syndrome conceptualization of moral injury: Results of a pilot study and directions for future research

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Introduction: Research shows that a high proportion (65%; Hansen et al., 2021) of Canadian military personnel and Veterans report exposure to potentially morally injurious events (PMIEs), events which have the capacity to deeply violate one's core more beliefs. Moral injury (MI) is a common term used to describe the distress prompted by such events, and is characterized by intense moral emotions (e.g., guilt, shame, anger), and important disruptions in identity, spirituality, and interpersonal functioning. While there is recognition that MI may not be well captured in our current psychiatric taxonomy (e.g., Litz & Kkerig, 2019), no study has yet empirically assessed how a syndrome conceptualization of MI might apply in practice. The aim of the study was to examine how access to a MI syndrome description affects clinical decision-making in the context of military trauma.

Methods: In this pilot study, 16 clinicians in Canada (n=13 clinical psychologists; n=3 psychiatrists) were randomized into two groups (access to MI as a diagnosis or not). Participants were each presented with three vignettes describing symptoms consistent with posttraumatic stress disorder (PTSD), major depressive disorder, and MI, and asked to provide a diagnosis and treatment recommendations. All participants also answered structured questions rating their perceptions of the clinical utility of MI.

Results: Percent agreement in diagnosis across vignettes suggested that access to the MI symptom set worsened diagnostic agreement for cases of PTSD and depression, but improved agreement for the MI vignette. Light's kappa demonstrated fair agreement across cases in both groups (MI-Group = .20; No-MI Group = .33, both p>.05). For the MI vignette, cognitive intervention strategies were most commonly recommended, while exposure therapy was most commonly recommended for the PTSD vignette. The majority of clinicians (n=13; 81%) agreed that MI is not properly addressed in current clinical practice, and that the construct captures experiences not otherwise covered by existing diagnoses. Most clinicians (n=14; 88%) also agreed that the MI syndrome description provided fit with cases they currently see in practice.

Conclusions: While most clinicians agree that MI is a clinically useful construct, additional research is needed to understand how best to apply MI in clinical practice. Future studies are needed to examine both the syndrome account and transdiagnostic utility of MI.

5A01: Instructor Reports of The Effectiveness of the Road to Mental Readiness Fidelity Training for Program Implementation

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Program/Intervention Description: A key component of the success of the Road to Mental Readiness (R2MR) programming is fidelity of implementation (FOI) by course instructors, which reflects the degree to which programs are implemented *as intended* by program developers, and which was shown to significantly impact R2MR's effectiveness in a randomized control trial conducted in 2017-2018. The program has since launched a large-scale training and evaluation initiative to improve FOI including pre-training (e.g., selection), in-class training, and post-training (e.g., refresher training) practices. Here, we will present results from Level-II R2MR instructor evaluations regarding the perceived effectiveness of their in-class Fidelity-Focused Instructor Training (FFIT) for improving their self self-efficacy, and attitudes and motivation regarding FOI. The FFIT package was designed using best practices for implementation fidelity including a blend of theoretical and experiential learning approaches, teach-back activities and assessments, and targeting instructors' expectations, motivations, and sense of self-efficacy regarding fidelity and program implementation (as intended).

Evaluation Methods: Level-II instructors were surveyed following their fidelity training in 2022-2023 (n = 65 but data collection is ongoing). The survey includes both quantitative and qualitative items. Specifically, instructors are asked to (anonymously) answer questions on the perceived quality of the training that they received, such as their perceived confidence in being able to effectively deliver their courseware, their perceptions of the facilitator, and effectiveness of particular teaching strategies. Other questions capture their perceptions of the specific courseware that the instructors are preparing to teach, such as its perceived usefulness and benefit by the target audience. Respondents are also asked questions regarding their perceptions of implementation effectiveness including the importance of teaching relative to work commitments, and the predicted support from one's Chain of Command (CoC). Finally, instructors were asked to provide open-ended feedback on various topics such as how the training could be improved.

Results: We anticipate that overall perceptions of the effectiveness of the FFIT should be encouraging, with the

majority of participants showing agreement with statements reflecting self-efficacy and confidence in future instruction and ability to demonstrate program adherence. However, given the exploratory nature of this work, we are interested in identifying potential gaps in training effectiveness to further improve our FOI efforts.

Conclusions: Implementation fidelity is a key component of an effective program and continues to be a top priority for R2MR's strategic direction. These results will shed light on the effectiveness of R2MR's current FFIT efforts in order to ensure its accountability in producing high-quality Level II instructors.

5A03: Integration of blended learning strategies into Road to Mental Readiness

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Program/Intervention Description: The Road to Mental Readiness (R2MR) is a Canadian Armed Forces (CAF) program that teaches both knowledge and skills to improve in the areas of performance, mental health and resilience. In support of ongoing enhancements to program efficiency and fidelity, R2MR has adopted a blended learning approach that combines engaging personalized online training modules with in-class sessions where the learning is consolidated and skills are applied. The hybrid learning approach allows participants to engage with the didactic learning at their own pace prior to in class training, thereby creating time and opportunities for meaningful discussions and skill application in the classroom. Training that includes integrated online modules includes Fidelity Focused Instructor Training (FFIT); occupation specific training for Air Combat Systems Officers, Aerospace Electronics Sensor Operators and Flight Engineers; and unit specific training for Joint Task Force X.

Evaluation Methods: The implementation of blended learning has been evaluated through stakeholder review sessions, focus tests and pilot implementations, with both qualitative and quantitative data collected. Barriers and facilitators to implementation were also considered, along with the role of blended learning in fidelity of implementation.

Results: Results from stakeholder reviews, focus tests and pilot implementation indicate that this approach to learning is very well received by participants, contributes to increased ability to apply the skills to job-related demands, and contributes to enhanced learning outcomes.

Conclusions: Blended learning has allowed R2MR to the opportunity for increased number of exposure to the content and to scaffold the learner's experience by building on each topic through each exposure to the program material. This

methodology enhanced knowledge retention, allowed for greater longer and more in-depthpractice in skill application and facilitated tailored integration of learning into the learners' daily tasks. For courseware that alternates in-class and online sessions, the ability to personalize the online learning and give more time in-class to application and integration activities contributes to enhanced learning outcomes.

6C05: Characterizing Arousal and Emotional Demands for Personalized Virtual Stress Exposure Training

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Introduction: The Canadian Armed Forces (CAF) currently employs the Road to Mental Readiness (R2MR) program as its primary source of mental health and stress resilience training. Previous research on CAF training has illustrated the desire of CAF personnel to increase exposure to stress in controlled conditions by way of engaging in realistic scenarios throughout mental health training. Further, evidence from trials with CAF members indicated that practicing coping strategies at rest has limited physiological and performance impact. Training military personnel in real world settings, however, is resource intensive, costly, and in many cases, does not allow for repeatable training contexts. Importantly, arousal control training during stressful virtual reality (VR) scenarios has been previously demonstrated in CAF soldiers to promote optimal arousal states for improved stress management skills. Further, it has been shown that heart rate variability (HRV) is a key index to individuals' overall resilience profiles and can be used as part of an adaptive relaxation stress exposure training protocol.

Methods: The National Research Council Canada has developed bWell, an interactive and immersive VR platform that delivers multisensory tasks, targeting general aspects of cognition and everyday functioning. This project utilized three bWell exercises to systematically test adaptive aspects of cardiac vagal control within specific contexts of self-regulation. In this experiment (within-subjects design, conditions pseudo-randomized), we evaluated whether exercises designed to induce different types of stressors (i.e., emotional, cognitive, physical, and dual) can reliably elicit genuine stress responses in 12 civilian participants. Both perceived stress and physiological responses (HRV and facial expressions) were captured. Further, we analyzed whether the physiological measures correlated with performance in VR.

Results: Results confirm that the different bWell exercises elicit both perceived and measured responses. Further, the

observed HRV changes in a particular stressor context were in line with the hypotheses from theoretical frameworks (Neurovisceral Integration Model and Vagal Tank Theory). Within the cognitive exercise, the results show significant decrease in HRV with improved performance, as hypothesized. Preliminary evaluation indicates links between physiological measures (HRV) and self-reported stressors. Similar analyses are ongoing to evaluate facial expression and mood reported during the VR tasks.

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 simulated stressors to ultimately optimize transfer and application of such skills to relevant operational environments.

7A03: Feasibility of Online Health Coaching for Canadian Armed Forces Personnel in Mental Health Treatment

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Introduction: The Canadian Armed Forces (CAF) Mental Health Clinics treat full spectrum mental disorder, addictions and psychosocial issues. Improving adherence to health behaviours including walking, moderate-to-vigorous exercise, healthy eating and mindfulness practice has been demonstrated to improve mental health, but support for these interventions is lacking. We evaluated the feasibility of an online health coach intervention delivering behaviour change support for individuals receiving treatment at CAF clinics. The primary objective was to assess the feasibility of the online delivery and acceptance of health coaching with CAF members.

Methods: Service members were provided accounts on NexJ Connected Wellness, a digital health platform and 16 weeks of phone-based health coaching, emphasizing mild-to-moderate aerobic exercise, healthy diet and mindfulness-based Cognitive Behaviour Therapy (CBT) content. Feasibility was evaluated in terms of recruitment, engagement, and program satisfaction. We additionally evaluated health behavior change, program completion and mental health symptoms (i.e. PHQ-9, GAD-7, PCL-5) at three time points.

Results: Service members were recruited from Vancouver, Esquimalt and Edmonton CAF bases between August 2020 and January 2021. N=106 CAF personnel were referred and

n=77 consented. N=66 participated and n=43 completed 4 month followup measures. The platform received a mean rating of 76.5 on the System Usability Scale, and health coaching was judged the most helpful program feature (95.2% endorsement) while reminders (53.7%), secure messaging (51.2%) and notifications (51.2%) were also identified. Improvements in mental health status on the PHQ-9 , GAD-7 , and PCL-5 were also observed.

Conclusions: Online health coaching was well-received, amidst the COVID-19 pandemic and related lockdowns. Uptake and engagement were positive, and participants valued interactions and reported strong therapeutic alliances with health coaches. Healthy diet, regular exercise and mindfulness practice are important for physical and mental health. Engagements in these behaviours are associated with reduced symptoms. An online health coach program appears feasible for assisting Canadian Armed Forces personnel.

7A04: Patient-Reported Outcome Measures for Progress Monitoring and Treatment Evaluation of Depression (PROMPT-D) Feasibility Study: Evaluation of Study Results Against Established Success Criteria

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Introduction: Depression is a common, chronic, relapsing and debilitating mental disorder, which can negatively impact the quality of life and ability to work for members of the Canadian Armed Forces (CAF). Current evidence-based practice guidelines for the management of depression endorse the use of patient-reported outcome measures (PROMs) to inform and evaluate treatment. Evaluation of the effectiveness of antidepressant treatments in depressed CAF service members requires the development of clinical trials in which PROMs are consistently used at key time points during and after the completion of antidepressant treatment. However, assessing the feasibility, reliability, and validity of such clinical trial designs require small scale feasibility studies as an essential pre-requisite to their successful planning and implementation.

Methods: Patient-Reported Outcome Measures for Progress Monitoring and Treatment Evaluation of Depression (PROMPT-D) is a multi-site, prospective, observational feasibility study of depression treatment effectiveness through routine mental health clinical practice. This study enrolled 59 CAF service members diagnosed with depression at 4 mental health clinics across Canada. It involved the collection of repeated PROMs over a period of 12 weeks. Participants had access to NexJ Connected Wellness (NCW), an online platform for population health management, to complete electronically delivered questionnaires at 5 time points during the study period (April 2022 – March 2023). A study objectives evaluation

exit interview assessed barriers and facilitators to adherence to study protocol and engagement with NCW at the end of enrollment period. Feasibility, suitability, and acceptability outcomes were evaluated against a priori established study success criteria and measured through descriptive statistics and qualitative analysis.

Results: Recruitment and retention rates were 69% and 80% respectively. Outcome data completion exceeded 80%. Most interviewed participants demonstrated excellent capacity of completing trial-related tasks and reported that NCW was appropriate for collecting PROMs and the questionnaires' items were appropriate and self-explanatory. Compliance with NCW was demonstrated by data being collected in more than 80% of follow-up visits. Qualitative analysis did not identify any potential problems that could hamper the implementation of the subsequent larger trial.

Conclusions: The main findings of the PROMPT-D feasibility study provide preliminary evidence of the high potential of using PROMs to inform and evaluate depression treatment and help determine important factors for the development of a future larger clinical trial that will assess the effectiveness of antidepressant treatment in depressed CAF service members through routine mental health care augmented by the use of repeated PROMs.

7A05: Effects of Adversity on Brain Function: Evidence from a Large-Scale Meta-Analysis of fMRI Studies

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Introduction: Background: Exposure to adversity and trauma increase the risk for mental health problems, including post-traumatic stress disorder (PTSD). The mechanisms that explain how adversity exposure increases risk for psychiatric illness remains unclear. Although many groups have reported that people with a history of adversity exposure exhibit altered brain responses to various psychological challenges, the literature exhibits striking inconsistencies. Indeed, a recent activation likelihood estimation (ALE) meta-analysis failed to identify consistent effects of adversity on brain function.

Aims and Objectives: Here, we conducted a multilevel kernel density analysis (MKDA) meta-analysis, an approach considered more robust than ALE to small sample sizes and methodological differences between studies. Moreover, relative to ALE-based meta-analyses, MKDA analyses are a more powerful tool to make inferences about whether a new study on the same topic will activate the same regions. Indeed, MKDA has several applications in neuroimaging meta-analyses, including its strength in evaluating specificity of patterns of neural activity associated with a particular psychological process.
Methods: We conducted a literature search using four

databases: PsycINFO, Medline, EMBASE, and Web of Science. The inclusion criteria were empirical functional magnetic resonance imaging (fMRI) studies of human participants with a. measure of adversity, brain responses to stimuli within four domains (emotion processing, memory processing, inhibitory control, and reward processing), and whole-brain coordinate-based fMRI results in Talairach or Montreal Neurological Institute (MNI) space. Eighty-three fMRI studies were included in our meta-analysis yielding a combined sample of 5242 participants and 801 coordinates.

Results: The analyses indicated that across studies, adversity exposure is linked with heightened amygdala reactivity (FWER corrected at $p < .001$; $x = 22$; $y = -4$; $z = -17$) and blunted prefrontal cortex activity (FWER corrected at $p < .001$; $x = -39$; $y = 16$; $z = -8$), particularly during emotion processing tasks.

Conclusions: It is conceivable that individuals with adversity exposure have an exaggerated neural response to threatening stimuli; likewise, the blunted PFC activity may suggest reductions in top-down control (or down-regulation) of limbic responses to threat. These results might better identify how exposure to adversity and trauma diminish the ability to cope with later stressors, thereby heightening susceptibility to diverse mental health problems.

Poster Presentations

P132: Identifying pre-military risk factors for suicidal ideation among recruits entering the Canadian Armed Forces

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Introduction: The Canadian Armed Forces (CAF) Suicide Prevention Action Plan seeks to promote well-being and mitigate risks for suicide in military personnel and Veterans (Government of Canada, 2018). To support and maintain ongoing risk management efforts, the CAF must identify potential risk and protective factors at each stage of the military career. However, most research to date has focused on active-duty military personnel and Veterans (e.g., Boulos, 2021a; 2021b; Brunet & Monson, 2014; Thompson et al., 2019a; Thompson et al., 2014). The aim of this study was to better understand and examine a wide range of risk factors for suicidal ideation (i.e., thoughts of death and/or self-harm) among recruits prior to basic training.

Methods: Participants were 56,533 Officer candidates and non-commissioned members (84.6% male; 78.5% non-commissioned members; 64.5% under 25 years of age) who completed the Recruit Health Questionnaire (RHQ) from 2003 to 2021. The RHQ is administered on an ongoing, voluntary basis to Regular Forces CAF recruits in the first weeks of basic military training. Respondents indicated the extent to which

they engaged in suicidal ideation in the past two weeks. They were also asked about their health (physical and mental), health behaviours (e.g., cigarette smoking, cannabis use, physical activity), psychological disposition (e.g., personality, self-esteem, hardiness), and social environment (e.g., childhood adversity, threatening events, social support).

Results: Approximately 4% of respondents reported experiencing suicidal ideation in the two weeks prior to basic training. Key findings indicate that those aged 17-19 years and males were at an increased risk of suicidal ideation than older recruits (i.e., aged > 20 years) and females, respectively. Furthermore, symptoms of depression and post-traumatic stress disorder (PTSD), and neurotic personality traits, were risk factors of suicidal ideation. High mastery and self-esteem were associated with lower possible suicidal ideation.

Conclusions: Although most participants reported being healthy at entry to basic training, a small proportion appeared to be at risk of experiencing significant psychological distress. More research is needed to fully explore the relationship of reported distress prior to basic training and mental health outcomes, and how this could contribute to ongoing efforts to support mental health of CAF members from recruitment through the rest of their careers.

P135: Evaluation of the Road to Mental Readiness for Health Services: Impact of COVID-19

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Program/Intervention Description: Informed by recent research on both physical and mental health care among Canadian Forces Health Services Personnel (CFHSP), The Road to Mental Readiness (R2MR) developed a mental health training program for CFHSP with the primary goals of: increasing knowledge of available resources and mental health skills, encouraging access to care when required, and decreasing stigma surrounding mental health services use. Due to the timing of this evaluation, the impact of COVID-19 on this group was reflected in the interview results. Pandemic specific themes and challenges for this group are discussed.

Evaluation Methods: Using a mixed-methods approach, all participants who completed the health services R2MR training were invited to complete an online survey (N = 125). A sub-sample of respondents participated in a semi-structured interview (N = 25). The survey included questions regarding knowledge of existing resources in the CAF, a skills test of the main skills taught in the course, and the Inventory of Attitudes toward Seeking Mental Health Services (IASMHS) scale. The interview questions targeted applicability of skills learned, ease in seeking mental health care, and comfort level providing support to their colleagues.

Results: Qualitative results suggest three distinct workplace environments (WPE): supportive, mental health culture change in the right direction, and unsupportive. Results varied by WPE.

Many participants indicated that guidance from the training may have been more directly applicable prior to the pandemic; the increase in work demand, pace, and risk, made the suggestions from the training feel unrealistic. Many participants indicated that the traumatic nature of both the work environment (hospitals and long-term care facilities), isolation requirements, lack of autonomy, and infrequent communication with leadership during the pandemic impacted overall well-being, morale, and trust in their chain of command. Further, results suggest that the experiences during the pandemic further disconnected CFHSP and their leadership. Results suggest that this disconnect has had an impact on the perception of the helpfulness of existing mental health resources. Many participants indicated developing mental health injuries during this time.

Conclusions: The demand on CFHS personnel during the pandemic has had a significant impact on the mental well-being of this group. The difficulty of the work conditions, and perceived lack of connection and support from the CoC has had an impact on the perceived helpfulness of mental health support offered by the CAF.

P142: 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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Introduction: 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). Training military personnel in real world settings, however, is resource intensive, costly and in many cases, does not allow for repeatable training contexts. While virtual training reduces resource intensity and cost, these virtual environments do not engage all senses and as a result can lead to maladaptive behaviour consequences. Specifically, player engagement with virtual environments has been limited to visual and audio cues with some haptics introduced through game controller vibration. Haptic garments offer great potential to increase realism and perceived stress through tactile sensory stimulation. ARAIG is a multisensory haptic garment that provides vibration,

muscle stimulation and localized sound.

Methods: A training scenario was designed in the VBS3 virtual simulation environment tailored for military police skill and resilience development in hostile deployments. Skill development was aligned with specific CAF Military Police performance objectives. Resilience development was aligned with the R2MR program. The training scenario incorporates DRDC Game Design principles for: player autonomy and control; progression towards a goal; attainable challenges; development of social bonds; capacity for achievement; possibility of competition; and differing skill levels of players.

The scenario was enriched with haptics activation and designed for use with the ARAIG haptics garment. Configured activations were in different forms for transport, weapon firing and other events with enemy combatants.

Physiological data capture using the Zephyr bioharness is synchronized retrospectively with real-time training scenario data using McGregor's Artificial Intelligence (AI) based Big Data analytics Athena platform. Personal resilience, arousal control, subjective stress, and skill development are assessed using a range of analyses.

Results: Preliminary data collection has confirmed game activity including ARAIG activation, performance metrics, and physiological data are retrospectively synchronized in the Athena AI big data platform for individual resilience assessment. Forthcoming data analyses on heart rate variability, breathing rate, and perceived stress will provide insight for personalized resilience and skill assessment.

Conclusions: This research is contributing to the CAF R2MR SET program to strengthen readiness and resilience, and ultimately the operational capability of the CAF. It demonstrates how virtual SET using a haptic garment and associated data analysis enables repeatable assessment and development of skills and resilience. The initial results demonstrate the potential of the ARAIG haptic garment to personalize and increase the realism of the virtual training scenario.

P143: Investigating demographic characteristics and the lived experiences of United Kingdom military personnel diagnosed with an adjustment disorder

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Introduction: Adjustment disorder (AjD) is frequently reported as the most diagnosed mental disorders in the UK Armed Forces alongside depressive episode. Using a

mixed-methods approach, the current study examined AjD within the UK military population from the perspective of military patients diagnosed with an AjD and from the perspective of military clinical and welfare staff. Due to the lack of existing qualitative literature to understand AjD in any military population and limited quantitative research for the UK military population, a mixed-methods approach was selected.

Methods: Online questionnaires and one-to-one interviews were used to explore the lived experiences of military personnel with an AjD diagnosis including pre-enlistment factors, military experiences, the onset of AjD, treatment, and clinical and occupational outcomes (N = 19). Qualitative interviews with military clinical and welfare staff investigated AjD in the UK military from a professional perspective (N = 8).

Results: 'Childhood adversity' and 'neuroticism' were found as pre-enlistment themes. Work stressors included frequent relocations, deployments and bullying or harassment. Personal stressors discussed varied from the death of loved ones, serious accidents, illness or injuries, COVID-19, and court cases. A theme emerged that an 'accumulation of both work and personal stressors' were experienced, and the frequency of stressors was described as having the biggest negative impact on their ability to cope. An 'escaping the stressor' theme was found where personnel engaged in suicidal behaviours and substance misuse to escape the significant life events they faced. 'Leaving the military' was identified as an occupational outcome of AjD which was often reported as a direct outcome due to how personnel's experience of AjD was handled by the military. Military clinical and welfare staff described AjD as being frequently misdiagnosed due to being thought of as a 'less severe' diagnosis compared to other mental disorders.

Conclusions: Specific work stressors such as frequent relocation and high workloads help to offer an understanding of the higher prevalence of AjD in the UK military compared to other disorders. Hazardous behaviours such as suicidal ideation, suicidal attempts and substance misuse suggest AjD is a more harmful disorder than previously thought. The study highlights a need for future research to investigate the occupational impacts and to understand the suicidality of AjD for military personnel.

P147: Development of a Trauma-Informed Research Framework for Defence Research

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Brief Description: All social science research related to

military health and well-being is routinely held to rigorous standards set by research ethics boards (REBs) to ensure the safety of research participants. When individuals have previously experienced trauma, however, additional care must be taken to mitigate the risk of re-traumatization and secondary harm. The risk of vicarious trauma for researchers undertaking these studies must also be addressed to ensure their safety and well-being. Trauma-informed approaches are widely accepted as the fundamental basis for preventing secondary harm by building awareness about the causes and impacts of trauma; promoting safety and trustworthiness; prioritizing individual choice and control; and focusing on strength and skill building. While practice standards for trauma-informed approaches are commonly available in clinical and policy settings, there is little evidence-based guidance as it relates to social science research, and none that specifically outlines key considerations for research involving CAF members, veterans, and their families. In response, a group of defence scientists are developing an evidence-based trauma-informed research (TIR) framework for defence research, for use both within the Department of National Defence (DND) and externally in related research contexts.

Patient Population: This framework is applicable to three categories of individuals: 1) Participants taking part in defence research (i.e., CAF members/Veterans/family members/civilian members of the Defence Team); 2) Civilian/military researchers undertaking this research; and 3) Policy/program managers involved in research activities.

Results: The TIR framework is currently being supported by a number of scholarly activities, all of which incorporate gender and diversity considerations through the application of the Government of Canada's Gender-Based Analysis Plus (GBA+). These activities include: 1) a systematic literature review on conceptual foundations and best practices to support trauma informed research; 2) internal consultations at DND that draw on the experience and expertise of defence scientists to identify key considerations for study design, methodology, and systems-level processes; and 3) inter-departmental and external/academic researcher consultations to explore and assess the applicability of related approaches to trauma-informed research (planned for late 2023). Highlights of the underlying conceptual foundations of the TIR framework will be presented and linked to key findings from the internal researcher consultations, with specific focus on the risks, impacts, and mitigating factors of secondary trauma for both research participants and researchers.

Conclusions: Defence organizations must build awareness of TIR and support a culture of researcher wellness to ensure the safety of participants and researchers, and to prevent secondary trauma.

P151: The relationship between repeated blast overpressure exposure, history of concussion, mental health and neurological symptoms in active duty Canadian Armed Forces personnel and Veterans

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Introduction: Evidence suggests occupational exposure to repeated blast overpressure (ReBOp) from heavy weapons and explosive charges causes cumulative, subconcussive neurotrauma, with symptoms that can mimic mild traumatic brain injuries (mTBI) and/or posttraumatic stress disorder (PTSD), even without concussion history. The objective was to assess the relationship between levels of ReBOp exposure, concussion history, and neurological and psychiatric symptomatology.

Methods: Data were collected as part of a cross-sectional study investigating the neuropsychiatric symptoms in active-duty CAF members and Veterans, from occupations spanning multiple roles, including logistics officers, infantrymen, tankers, and combat engineers, among others. In total, 64 participants were stratified by level of blast exposure (High vs Low Exposure) then matched by sex and age. Blast exposure was estimated using the Generalized Blast Exposure Value (GBEV) questionnaire and blast exposure count (BEC) subscale which are derived from type and frequency of blast exposure. The severity of psychiatric symptoms for anxiety, depression and PTSD were collected using the Generalized Anxiety Disorder (GAD-7) questionnaire, Patient Health Questionnaire (PHQ-9), PTSD Checklist (PCL). History of diagnosed concussions was captured using the Acute Concussion Evaluation (ACE) and presence of neurological symptoms using the Sport Concussion Assessment Tool 2 (SCAT2) questionnaires.

Results: No statistically significant differences were identified between groups for anxiety or depression symptoms. The High Exposure group reported trending higher PTSD symptom severity (=41.7 vs =33.5;), and significantly more neurological (mTBI-like) symptoms (=11.1 vs =7.3; p=0.014) and greater severity of symptoms (=26.4 vs =13.2; p=0.02). Groups did not differ in the number of diagnosed concussions reported, suggesting that differences in neurological symptoms may be due to increased blast exposure. Secondary analyses demonstrated the raw BEC was more closely associated with neurological symptom severity (p=0.288) than the weighted GBEV (p=0.235), and both BEC and GBEV were more highly correlated with neurological severity than number of diagnosed concussions (p=0.126). Furthermore, neurological symptom severity was highly correlated with PTSD symptom severity (r=0.753), suggesting cumulative blast exposure exacerbates neurological symptoms that subsequently mimic PTSD.

Conclusions: Greater exposure to blast overpressure waves was associated with increased number and severity of mTBI-like symptoms, which was related to the severity of PTSD-like symptoms. Further investigations should assess larger sample sizes, longitudinal data, neurocognitive and behavioural functioning, and advanced brain imaging to improve understanding of how military occupational ReBOp affects brain function. These data could improve diagnosis and treatment for subconcussive injuries and inform training regimes to improve the balance between safety and necessary blast exposure.

P153: A Systematic Review of Risk and Protective Factors For Self-Harm and Suicide Behaviours Among Serving and Ex-Serving Military Personnel of the United Kingdom, Canada, Australia and New Zealand

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Introduction: Self-harm and suicide behaviours are major global health concerns. The aetiology and onset of these behaviours are complex and often multifaceted. Although military service places substantial demands on personnel and involves unique occupational experiences, often self-harm and suicide rates in this group are lower or comparable to the general population. There remains a paucity of research exploring self-harm and suicide behaviours among several military populations outside of the United States. This review aimed to identify the risk and protective factors associated with self-harm and suicidal behaviours among serving and ex-serving military personnel of the United Kingdom (UK), Canada, Australia and New Zealand.

Methods: A systematic review was conducted in October 2022 in accordance with an *a priori* PROSPERO approved review protocol (CRD42022348867). Seven electronic databases were searched to identify relevant studies. Papers were retained if they (1) identified the risk and/or protective factors associated with self-harm and suicide behaviours, (2) reported on outcomes of self-harm, suicidal ideation, suicide attempts and/or completed suicide, (3) reported on populations of serving and/or ex-serving personnel of the UK, Canada, Australia and New Zealand, and (4) peer-reviewed papers, published in English between 1st January 2001 and 30th September 2022.

Results: In total, the searches returned 4,576 papers, with 28 identified for inclusion after all stages of screening. Of these papers, the majority were from the UK and Canada. Papers reported on samples of ex-serving personnel (n=12), serving personnel (n=8), or both (n=8), and used all or majority male samples (approximately 85% to 100% male). Research identified several risk factors, including physical and mental health diagnoses, childhood abuse exposure, holding a junior

rank during service, exposure to deployment-related traumatic events, and having a shorter length of service. Several protective factors were identified, including higher levels of perceived social support, being educated to a higher degree, being employed, being married/in a relationship, and holding a more senior rank during service, but protective factors were not as widely researched.

Conclusions: This review highlights several risk and protective factors for self-harm and suicide behaviours which warrant attention. Adequate care and support are necessary for serving and ex-serving personnel potentially at risk of experiencing self-harm and/or suicide behaviours. The protective factors suggest that prevention and intervention strategies should promote social networks as a key source of support for military personnel. More research is needed, particularly in regard to protective factors.

P154: Mental Health Continuum Descriptor Enhancement Project

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Introduction: R2MR has several resources to support the well-being of the defence community including a mobile app. This app contains a mental health self-assessment 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 by a working group in 2020. The purpose of this project is to 1) test the accuracy of the revised domain descriptors and new sub-domain descriptors (Study One), 2) identify a subset of the most valid descriptors to include in Study Two, and 3) evaluate whether presenting sub-domain descriptors prior to the domain descriptors leads to more accurate self-mapping along the MHCM relative to the domain descriptors alone (Study Two). Data collection for both studies will take place in the spring/summer of 2023.

Methods: Studies will be conducted via online surveys. In Study One, we will recruit 545 Reg Force members to complete a matching task (matching MHCM domain descriptors to their appropriate anchors). In Study Two, we will recruit 271 Reg Force members and ask them to complete validated scales in the domain areas in addition to MHCM self-mapping task (informed by Study One). Participants will also be randomly assigned to either map themselves using both sub-domain and domain descriptors, or just the domain descriptors alone. In Study One I will use descriptive statistics to calculate accuracy scores for each descriptor. For Study Two, I will conduct t-tests to compare accuracy scores between conditions, correlations among MHCM descriptor domain

scores and associated validated scale scores, and discriminant function analyses to test how well the scale scores predict self-mapping to anchors (healthy, reacting, injured, ill) between conditions.

Results: In Study One, I predict that the revised domain descriptors will have higher accuracy rates than those reported previously. For Study Two, I predict that completion of the sub-domain descriptors will improve the accuracy of self-mapping along the MHCM, and that correlations among validated scale scores and self-mapping within each domain are stronger for the sub-domain + domain descriptor condition relative to the domain-only condition.

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.

P180: Exploring the unique experiences of Military Sexual Trauma amongst Canadian Armed Forces Reservists and Veterans

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Introduction: Multiple reports on sexual misconduct and culture change in the Canadian Armed Forces (CAF) have noted a need to address how sexual misconduct affects various groups within the Forces in different ways. Reservists make up 30% of the entire strength of the CAF, however, information on Reservists is limited. In addition, Reservists often have differing experiences in the CAF compared to Regular Force members. The aim of this study is to understand the experiences of CAF Reservists and Veterans who have experienced military sexual misconduct (MSM) and/or military sexual trauma (MST) to provide insight into how to prevent and address incidents of sexual misconduct.

Methods: Qualitative content analysis will be implemented using an inductive, interpretive phenomenological approach to understand the experiences of CAF Reservists and Veterans who have experienced MSM and/or MST in the CAF. We will be recruiting 15-20 English speaking participants from across Canada who are currently serving or have previously served in the CAF Reserve Forces and have experienced MSM and/or MST. All sex, gender identities, age ranges(18+), and years of service will be eligible for participation.

Results: Exploring the experiences of CAF Reservists will provide a more thorough understanding of MST to prevent and address sexual misconduct in the CAF. By recruiting and interviewing both actively serving Reservists and Veterans, this project will build a picture of sexual misconduct in the Reserve Forces over time, incorporating discussion of positive change, points of resistance to CAF policies, and suggestions for supporting persons with lived experience of MSM. This study will explore how culture in the Reserve Forces is different from Regular Forces and how/if it plays a role in the experiences and responses to MSM and MST. In addition, an understanding of lived experiences with MST among Reservists will provide suggestions for training and policy related to sexual misconduct specifically tailored to Reservists, including content and methods of delivery. A final anticipated result is a more thorough understanding of how sexual misconduct affects the recruitment, retention, and release decisions/circumstances of Reservists.

Conclusions: The Reserve Forces are an important and understudied component of the CAF. This project builds on the literature on how various sub-cultures within militaries experience and respond to sexual misconduct. This information will provide the CAF with a more granular picture of how Reservists feel about culture change initiatives generally, and more specifically as they relate to MSM/MST, where resistance lies, and where they see room for improvement.

PRIMARILY PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

3D02: Bariatric Surgery Should be Offered to Active-duty Military Personnel: A Retrospective Study of the Canadian Armed Forces' Experience

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Introduction: Canadian Armed Forces (CAF) personnel are as affected by obesity as the Canadian civilian population. As much as 49.0% of regular force members are classified as overweight and 25.0% as obese. Most Western armies are similarly afflicted. Bariatric surgery is an effective, durable, and accepted treatment for obesity in civilian practice. However, it is not yet approved for soldiers still in active duty in most countries worldwide. The CAF has authorized bariatric surgery in its Spectrum of Care since 2005. We hence report the CAF experience with members undergoing bariatric surgery while in service. Our aim is to assess weight loss, resolution of obesity-related comorbidities, and the impact of surgery on military careers.

Methods: We retrospectively reviewed perioperative data, long-term bariatric and military outcomes of 108 CAF active-duty military personnel who underwent bariatric surgery

in Canada during a 61-month period. Data was obtained through medical records and insurance registry review. Data is reported as Mean ± Standard Deviation.

Results: The cohort was predominantly male (66,7%) with a mean age of 42 ± 4.8 years and mean preoperative Body Mass Index of 43.6 ± 5.8 kg/m2. Roux-Y gastric bypass was performed on 59 patients, sleeve gastrectomy on 29 and gastric banding on 20. All surgeries were performed laparoscopically. The mean last follow-up was performed at 31.3 ± 18.5 months. There was no mortality. Early and late major complications occurred in 6.5% and 9.2% of patients respectively. Revisional surgery was performed in 5 patients. Total body weight loss at last follow-up visit was 22.5 ± 11.0%. There was resolution or improvement of diabetes in 76.7% of patients; hypertension in 73.4%; dyslipidemia in 55.2%; gastroesophageal reflux disorder in 43.6% and sleep apnea in 41.2%. One patient (0.9%) was medically released from the CAF because of postoperative complications of an anastomotic leak. Fifteen patients (13.9%) were deployed postoperatively. Combined deployable and possibly deployable status went from 35,4% before surgery to 47,9% postoperatively.

Conclusions: To our knowledge, this is the largest series of bariatric surgeries performed in active-duty military personnel. Bariatric surgery is effective, safe and improves deployability without impairing military careers. These results are relevant to the military administrations of many industrialized countries. bariatric surgery should be offered to all active-military personnel who meet surgical criteria for the treatment of their obesity.

3D04: Combat-related injury is associated with decreased lung function in military personnel deployed to Afghanistan: The ADVANCE study

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Introduction: Military personnel who experience combat related traumatic injury (CRTI) may develop a range of sequelae impacting the lungs. This includes direct pulmonary blast injury, inhalation injury, blunt trauma, pneumonia, acute lung injury and acute respiratory distress syndrome. The aim of this analysis is to investigate the relationship between lung function and CRTI in servicemen who served in Afghanistan between 2003 and 2014. We hypothesise that, eight years post injury/deployment, those who sustained an injury will have lower percent (%) predicted forced expiratory volume at 1 second (FEV1) than those who were uninjured.

Methods: The ADVANCE cohort comprises 579 combat-injured and 565 uninjured male UK Armed Forces ex-/serving personnel frequency-matched by age, rank, regiment, deployment era, and role on deployment. Participants attended a baseline health assessment which included lung function tests. Primary outcome was FEV1 % predicted; secondary outcomes included FVC (Forced Vital Capacity) and FEV1/FVC. The injured group were additionally categorised into levels of severity of injury using the New Injury Severity Score (NISS); mild-moderate injury (NISS≤25) and severe injury (NISS>25) with the uninjured as a reference group. Multivariable linear regression was performed to explore the association between CRTI and the primary outcome adjusting a priori for age and rank at time of deployment/injury.

Results: Spirometry was available for 963 participants (84%) and was measured, on average 8 years post injury/deployment. 484 were uninjured; 479 were injured and of these 76% had blast related injuries. The mean age at assessment was 34.6 years (standard deviation (SD) 5.24) and 91% (n=877) were Caucasian.

The mean FEV1 % predicted was 94.8% (SD 11.8) in the injured group and 97.1% (SD 11.0) in the uninjured group. Absolute values of FEV1, FVC and FVC % predicted were lower in the injured group compared to the uninjured group; no association was observed for FEV1/FVC. Adjusted analysis suggested that CRTI was significantly associated with a reduction in FEV1% predicted of 2.2% (95% CI -3.7%, -0.8%). Further, servicemen with the most severe injuries had on average a reduction in FEV1% of 6.3% (95% CI -8.3%, -4.2%) compared to those who were uninjured.

Conclusions: Among servicemen who deployed to Afghanistan, CRTI was independently associated with a lower FEV1 % predicted based on age and height. The differences reported, although statistically significant, are small but future work will examine longitudinal change in lung function, determine if results vary by type of injury and explore possible underlying causes.

3D05: The effectiveness of standardized physical training programs to reduce musculoskeletal injuries in Canadian Armed Forces combat arms developmental courses

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Program/Intervention Description: Musculoskeletal injuries (MSKI) are the primary cause of disability, medical employment

limitation (MEL) days and attrition across military populations. The leading cause of MSKI in the Canadian Armed Forces (CAF) are overuse injuries caused by physical training (PT). Research has shown that leadership supported modified PT effectively reduces MSKI, however it has not been broadly implemented throughout the CAF. Lack of stakeholder engagement to adapt research into context-appropriate interventions is a common barrier to implementation. The Generating Resilience to Injuries through Training (GRIT) study is a knowledge translation strategy that engages Defence Team Stakeholders (fitness, leadership, medical, research & training) to collaboratively adapt existing research on modified PT to develop and implement context-appropriate standardized PT programs that meet CAF occupational demands while minimizing MSKI risk.

Evaluation Methods: To date, the GRIT study has implemented standardized PT for two different combat arms developmental courses: a Developmental Period 1 Infantry (DP1) and a Developmental Period 1.1 Artillery Troop Commander (ATC) course. Guided by a knowledge translation framework, Defence Team Stakeholders collaboratively adapted research on modified PT to develop and implement a context-appropriate standardized PT program based on occupational demands and MSKI profiles, and proposed relevant outcomes including MSKI, MEL days and course attrition.

Results: Since 2019 standardized PT has been implemented on 4 DP1 courses, with 6 concurrent courses serving as controls. Among the 131 DP1 candidates participating in standardized PT, 56 total MSKI (16 overuse MSKI) were reported resulting in 169 MEL days and 6 attritions. Among the 188 DP1 candidates participating in usual PT, 115 total MSKI (63 overuse MSKI) were reported resulting in 780 total MEL days and 28 attritions.

Since 2022 standardized PT has been implemented on 2 ATC courses, with 3 historical courses serving as controls. Among the 25 ATC candidates participating in standardized PT, 6 total MSKI (1 overuse MSKI) were reported resulting in 0 MEL days and 0 attritions. Among the 53 ATC candidates participating in usual PT, 25 total MSKI (10 overuse MSKI) were reported.

Conclusions: To date, Defence Team Stakeholders have demonstrated the feasibility of implementing research informed, context-appropriate standardized PT into CAF infantry and artillery developmental courses and its' effectiveness in reducing MSKI and their associated burdens. These results may be used to inform policy on the value of standardized PT to reduce MSKI in combat arms developmental training.

3E02: Return to Duty Access Program (RtDAP): A pathway to manage Canadian Armed Forces members with extended medical employment limitations and aid in return to duty

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Program/Intervention Description: The Return to Duty Access Program (RtDAP) is a referral pathway from Primary Care into Physical Rehabilitation for patients in order to accelerate return to duty (RTD). Additionally, through this program members may also be referred to the Transition Center (TC) RTD coordinator in order to be placed on an RTD plan. The establishment of RTD goals, a controlled progression of an RTD plan, and addressing barriers is essential to the CAF mission

Currently, Medical Employment Limitations (MEL) (>30 days) are not prescribed based on functional assessments (FA) (the gold standard). Furthermore, they are not assessed nor progressed at regular intervals leading to delayed recovery, increased morbidity, and early release. RtDAP enhances collaboration between departments by engaging DND occupational therapists (OT) in the RTD process early and aligning MELs with FA as members progress through the recovery continuum.

Evaluation Methods: CAF members with MELs greater than 30 days will be referred into RtDAP for FA and potential referral to TC RTD programming. Outcome measures include descriptive statistics of the number of patients referred into the program, reasons for exclusion, frequency of MEL modification and numbers of patients returned to full duties. Additional data collected includes: time between initial assessment and referral to TC RTD, number of FA required to return members to full duties, and number of days spent on MELs. Program evaluation surveys (TBD) will be administered to all stakeholders. Finally, workload measures collected in physical rehabilitation will inform on the impact of RtDAP. Mixed methods data analysis will be used to interpret the results of this quality improvement project.

Results: Since implementation at 26 CF H Svcs Greenwood and CFHS Atlantic (2 CDUs only), 85 members have been referred into the program, 10 were screened out, and 89% have had MELs modified as a result of an OT FA. 34 members were referred to the TC RTD program and seven returned to full unrestricted work activities. OT outsourcing costs have not be affected as a result of implementation. Further statistical analysis of data will be available for CIMVHR presentation.

Conclusions: RtDAP fills an essential need facilitating collaboration and aligning services between CFHS

departments. Early access to RTD, ongoing FA and early integration into the workplace should be included whenever MELs are given. Thus far, RtDAP has demonstrated that OT FA leads to a change in MELs provided by the Primary Health Care Provider and helps facilitate referrals to the TC RTD Program.

4B02: A 5-Year Study of Heat-related Illnesses in the Canadian Armed Forces Regular Force Population

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[1]Department of National Defence

Introduction: Heat-related illnesses (HRI) are preventable health conditions that range in severity from discomfort (heat rash) to life-threatening (heat stroke). HRIs have a negative impact on military readiness and personal wellbeing. In 2018 the Directorate of Force Health Protection developed the Heat-Related Illness Surveillance System (HRISS) to better understand HRIs in the CAF. A retrospective study was conducted of all HRIs that were reported and/or diagnosed from January 2018 to December 2022.

Methods: A three-page electronic HRISS report form collects member characteristics, medication and substance use, hydration, and military circumstances and is completed by those who assess or treat any HRI. Relevant ICD-10 diagnostic codes along with demographic and military characteristics were identified using the CF Health Evaluations and Record Outcomes (CF-HERO) population health surveillance system. Analysis of the HRISS report form data will be reported at a later date. Descriptive analyses of the HRI ICD-10 data were conducted and person years were calculated for each year in the study period to enable a comparison of rates across key demographic and occupational characteristics over time. Logistic regression was conducted to determine the magnitude of the associations between HRIs and individual and occupational covariates.

Results: Overall, heat exhaustion and heat stroke were more commonly diagnosed among women (1.40 and 0.19 per 1,000 PY) compared to men (0.81 and 0.16 per 1,000 PY). HRIs were most common in personnel under 30 years of age (p<0.05). Across military commands, rates of HRIs were consistently highest among Army personnel – nearly double that of the Air Force and Navy. Incident diagnoses of heat exhaustion and heat stroke were highest in 2018 (1.51 and 0.25 per 1,000 person-years [PY]) and have remained stable at approximately half those rates since then (0.73 and 0.14 per 1,000 PY, 2019-2022).

Conclusions: The incidence of HRIs in Regular Force personnel is comparable to recent USA and UK armed forces surveillance data, including the elevated rates in 2018. Higher rates among women is not consistent with findings from other military populations. Analysis of the surveillance report form data will provide additional details to help us better understand the risk to women in the CAF. Despite well known risk factors for HRIs, it is important to understand the epidemiology of HRIs in the Canadian military context to continue to inform the development and implementation of policies and procedures for reducing the occurrence and severity of these conditions in the CAF.

4B04: Hearing Loss and Tinnitus in the Canadian Armed Forces Regular Force Personnel: Results of an 8-Year Retrospective Study

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[1]Departement of National Defence

Introduction: Occupational noise is a common military hazard that can contribute to hearing loss and tinnitus. Hearing conservation is an essential component of military population health, as hearing-related disorders can adversely affect communication abilities and effectiveness, operational readiness, and personal wellbeing. We conducted a retrospective study of audiometric data and matched self-report questionnaire data from 2010-2017. The objectives were to determine the prevalence of measured hearing loss and tinnitus among active Regular Force personnel and to assess the association with history of deployment, blast exposure, and serious head injury.

Methods: All audiometric assessments conducted in Canadian Armed Forces clinics from 1 January 2010 to 31 December 2017 were captured electronically along with matched self-report questionnaires of hearing-related outcomes and risk factors. The most recent audiometric test data and matched questionnaire were included in this cross-sectional analysis. A total of 83,067 unique Regular Force personnel (14.2% female) were included in this study. Descriptive statistics were generated to describe the prevalence of hearing loss and tinnitus, and logistic regression analyses were conducted to determine the magnitude of the association between these outcomes and key covariates.

Results: Overall, the prevalence of noise-induced hearing loss (NIHL; pure tone average >25dB at 3, 4, and 6 kHz) was 20.2% and significantly more common among men compared to women (22.0% vs 9.3%; OR 2.8, p<0.001). Odds of NIHL were significantly lower in RCN (OR 0.67, p<0.001), RCAF (OR 0.64, p<0.001), and CJOC/CANSFOCOM (OR 0.63, p<0.001) compared to the Canadian Army, adjusted for age and sex. Tinnitus was significantly more common among men compared to women (21.7% vs 13.6%; OR 1.7, p<0.001). Tinnitus was significantly associated with severity of noise-induced hearing loss and most common among those in the Canadian Army. History of serious head injury, blast exposure, and oversea deployment

were all significantly associated with both noise-induced hearing loss and tinnitus.

Conclusions: Noise-induced hearing loss and tinnitus are common among Canadian Armed Forces personnel. This study was the first to document the burden of these conditions across the entire Regular Force population using electronic records from all those who had hearing assessments. The findings of this cross-sectional study will inform the ongoing hearing conservation efforts in the Canadian Armed Forces. In the future these measured audiometric data will be used to assess their association with comorbid physical and mental health conditions, and the resulting impact on operational readiness.

4E02: Associations Between Body Composition and Physical Performance in Female Canadian Armed Forces Members

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Introduction: In 2014, the Canadian Armed Forces (CAF) found that 74% of all service members had a body mass index (BMI) classification of at least overweight, of which 50% of female members fell in this category. BMI is a tool used to estimate body composition, yet accuracy when applying this method to military populations has been called into question. Current literature highlights the importance of body composition (i.e., skeletal muscle mass, fat mass) as key components to consider in physical performance. Our study aimed to look at body composition variables and how they associate to physical performance of female service members in the CAF.

Methods: A total of 90 female members of the CAF completed body composition assessments (InBody® (USA) bioelectrical impedance analyzer; fat and skeletal muscle, and an Ultrascan; bone mineral density), and a protocol to assess physical fitness: flexibility (sit-and-reach), muscle performance (long jump, medicine ball throw, back squat, bench press, single-legged wall-sit, back extension holds (Biering-Sørensen test), push-ups), and aerobic (treadmill VO_{2max} test). Results were analyzed using a simple general linear model and backward elimination method.

Results: The novel finding was a positive association between bone mineral density (BMD) and VO_{2max} (β: 27.39, 95% confidence interval (CI): [1.64; 53.14], p=0.041) and a negative association with body fat percentage (β: -0.67, CI: [-0.83; -0.50], p<0.001). Within flexibility scores positive associations were found in skeletal muscle mass percentage (β: 0.41, CI: [0.03; 0.79], p=0.039). Lastly, a positive association was found between muscle performance and skeletal muscle mass

(β: 0.74, CI: [0.49; 0.99], p<0.001) and a negative association between fat mass and muscle performance (β: -0.27, CI: [-0.37; -0.17], p<0.001).

Conclusions: Body composition is a key tool for assessing both health and physical performance in female CAF service members. As one might predict, our results indicate that those who had lower fat mass, higher skeletal muscle mass, and greater BMD, score higher on physical performance tests. These findings provide an insight into the association between body composition variables and physical performance within the female CAF population. Understanding the relationship between body composition and physical performance can promote the implementation of these metrics to assess the health of this unique population. Further research assessing body composition as a health marker could better support fitness interventions to help female CAF members reach their fitness potential and improve their operational readiness.

5C01: Determining the Ease-of-Use of Ruggedized CounterFlow Gauze by Canadian Armed Forces in a Swine Model of Junctional Hemorrhage

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Introduction: Hemorrhage is responsible for 91% of preventable prehospital deaths in combat. Bleeding from anatomical junctions such as the groin, neck, and axillae make up 19% of these deaths, and combat analysis reports estimate that effective control of junctional hemorrhage could have prevented 5% of fatalities in Afghanistan. Prehospital management of junctional hemorrhage relies on far forward whole blood resuscitation, administering intravenous tranexamic acid (TXA), and rapid use of tourniquets or hemostatic dressings. However, most hemostatic dressings require adjunct manual compression to be effective, making them time-consuming to apply and difficult to use during care-under-fire. A new gauze in development, CounterFlow-Gauze, propels TXA and thrombin deep into wound cavities to rapidly halt severe bleeding without requiring compression. Refined manufacturing processes, product design, and formulation have improved CounterFlow-Gauze's physical properties, cost, and shelf life. Here, we report the most recent studies examining both the efficacy and the usability of CounterFlow gauze using a swine model of severe junctional hemorrhage.

Methods: To evaluate the efficacy of the refined CounterFlow-

Gauze, a swine model of junctional hemorrhage was used which was based on a 4 mm femoral arteriotomy. Animals were randomized to receive CounterFlow-Gauze or Combat Gauze by a single experienced trauma surgeon. In a separate study, to demonstrate the usability of CounterFlow-Gauze, ten Canadian Forces Health Services Medical Technicians were randomized to treat two bleeds in a swine model of lethal junctional hemorrhage. Medics were given 1 unit of CounterFlow Gauze and 1 unit of Combat Gauze to manage the two bleeds but were blinded to the identity of the gauzes. Surveys were distributed to the medics for evaluating the packaging, ease-of use, and performance of each of the gauzes. Their feedback was collected and analyzed.

Results: Three-hour survival in the swine efficacy study was 11/12 (92 %) in the Combat Gauze group, and 12/12 (100%) in the CounterFlow-Gauze group. TXA was absorbed from the wound site and reached systemic plasma concentrations of nearly 10 µg/mL, which is similar to concentrations needed to inhibit fibrinolysis in vitro. Blood loss volumes were 11.5±3.6mL/kg and 10.8 ±1.5ml/kg in the Combat Gauze and CounterFlow-Gauze groups, respectively. The usability studies comparing gauzes are ongoing.

Conclusions: CounterFlow-Gauze is a promising hemostatic wound dressing for battlefield hemorrhage control, and for future adoption by CAF. The product is being evaluated by medics who are end-users of the technology to suggest areas for continued improvement.

6C02: Nobody Should Die Alone Without Trying: The TeleMentored Ultrasound Supported Medical Interventions Research Programs Efforts to Empowering Catastrophic Far-Forward Self-Care

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Program/Intervention Description: The majority of traumatic death occurs before a victim can ever encounter a healthcare provider. This has been accepted as unpreventable when severe injuries occur with no possibility of rescuers responding. A double paradox is that these victims often have anatomically simple wounds with complex physiology and while "alone" they are still "connected" by a smartphone. These individuals physically die alone, while virtually connected to a potential world-wide network of life-saving mentors and their smartphone could access the comprehensive library of human resuscitative science. If a seriously injured victim is not immediately incapacitated then there exists a number of techniques to empower point of care self resuscitation including both remotely telementored and

video-modelled point of care diagnostic, resuscitative, and interventional procedures.

The TeleMentored Ultrasound Supported Medical Interventions (TMUSMI) Research Group has conducted a 2-decade long program in attempting to empower prehospital care providers who must perform beyond their traditional capabilities and self-perceived boundaries. The program has evolved from a Space Medicine Beginning to guide astronauts on the International Space Station to image themselves under the remote guidance of terrestrial experts to the most recent paradigm where complete novices are guided to perform life saving self-diagnosis and if required self-intervention.

Evaluation Methods: The program began with a Parabolic flight campaign conduced in conjunction with NASA to examine the basic performance of in weightless conditions. The success of this paradigm justified inclusion of an ultrasound capability onboard the International Space Station. The onboarding of ultrasound with no trained user however created the need for remote guidance from the ground through remote telementored ultrasound (RTMUS). The success of this experience intuitively led to TMUSMI creating a fixed RTMUS link between a quaternary care hospital and a rural emergency room in the Rocky Mountains. While initially successful, any amount of delay was intolerable which generated a Program to explore RTM conducted immediately on smartphones. This experience led to follow-up programs providing procedural guidance and self-diagnosis all guided remotely.

Results: The overall result of the program has been to demonstrate the capability of willing but inexperienced non-experts to be able to perform advanced diagnostic maneuvers or resuscitative procedures upon others or themselves under remote guidance from distant experts.

Conclusions: Currently volunteers have been able to accurately self-diagnose with ultrasound and efforts are underway to explore the limits of extraordinary self care when the situation allows no alternative other than death. This paradigm should be formally pursued in future research.

6C03: Absolute strength: A key predictor of injury risk in Infantry Developmental Period 1 infantry candidates

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Introduction: The purpose of this study was to determine the accuracy of common injury predictors in a sample of Canadian Armed Forces (CAF) basic infantry course candidates.

Methods: A total of 169 (164 male, 5 female) Infantry Developmental Period 1 (DP1) candidates were recruited to participate in this study. Baseline demographics and variables previously reported as risk factors for musculoskeletal injuries (MSKI) in athletic and military populations were measured prior to the start of the DP1 course. Risk factors included: low BMI (<18.5kg/m2), high BMI (>27.5kg/m2), elevated waist circumference (>88cm for females, >102cm for males), being a smoker, physical inactivity, previous history of MSKI, ankle dorsi flexion (ADF) <35°, ADF bilateral difference >6.5°, Y-Balance bilateral difference ≥4cm, Y-Balance composite score <90%, and Fitness for Operational Requirements for CAF Employment (FORCE) evaluation results >1 standard deviation below mean. Also included was the Isometric Mid-Thigh Pull (IMTP) peak force in newtons (N) and relative peak force (N/body weight), as strength has been reported to reduce the risk and severity of MSKI. MSKI data was collected from participants for the 11-week duration of the DP1 course. Risk factors were compared between injured and non-injured participants using independent sample t-tests and Chi-Square Tests, and the variables demonstrating significant difference between groups were entered into a stepwise logistic regression. Receiver operating characteristic (ROC) curves were calculated for regression variables.

Results: Of the 169 participants (age = 21.8±3.4 yrs, height = 176.9±7.0 cm, weight = 81.0±13.1 kg, BMI = 25.8±3.4 kg/m2), 24% suffered an MSKI during the DP1 course. Four risk factors showed a significant relationship with MSKI. However, the results from the logistic regression analysis only selected IMTP peak force as significant predictor of MSKI (p=0.001). Using ROC curves, a threshold value of 1638 N for IMTP was established (area under the curve = 0.68), and the logistic regression analysis showed that participants with an IMTP below 1638 N, were five-times more likely to be injured compared to participants above (odds ratio=5.07, 95%CI, 2.2-11.6, p=0.000).

Conclusions: This study showed that absolute strength, measured using IMTP, was the only significant predictor of MSKI risk in a cohort of DP1 Infantry candidates. In the interest of minimizing MSKI risk in CAF combat arms occupations, there may be value in candidates participating in pre-course exercise programs focused on developing absolute strength.

Poster Presentations

P130: Advancing an Optimized Formulation of CounterFlow Self-Dispersing Hemostatic Powder for Non-Compressible Abdominal Hemorrhage

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Introduction: Non-compressible truncal hemorrhage (NCTH) is the leading cause of preventable death on the battlefield, accounting for nearly two-thirds of all deaths. Devices including Resuscitative Endovascular Balloon Occlusion of the Aorta and injectable self-expanding foams have been developed for halting hemorrhage, but they require technically challenging and invasive medical procedures to apply and introduce undue medical risk to casualties. To address this issue, we designed an injectable system of self-propelling particles called CounterFlow, which carries Health Canada-approved hemostatic agents throughout flowing blood in wounds and cavities to effectively halt hemorrhage without added compression. CounterFlow consists of bioresorbable calcium carbonate and tranexamic acid, which propel and disperse through a chemical reaction releasing carbon dioxide upon contact with blood. Previously, we demonstrated the safety and efficacy of CounterFlow as a minimally invasive intervention for managing NCTH. Here, we summarize the progress in optimizing the formulation of CounterFlow and establishing a scaled-up manufacturing process that improves product characteristics for managing NCTH, as a step toward future fielding.

Methods: CounterFlow formulations with different blends of proprietary excipients were screened to identify formulations with increased in vitro hemostatic activity and flowability through catheters. The optimized formulation was prepared using a scaled-up process amenable to future manufacturing, and the process was validated through in vitro quality control assays testing particle size, moisture content, flowability, CO_2 generation potential, and hemostatic activity

Results: The optimized formulation of CounterFlow displayed a 15% increase in *in vitro* hemostatic activity compared to earlier formulations; this highly hemostatic formulation was designated for scale-up. The scaled-up manufacturing process yielded >200 g of the optimized CounterFlow formulation in one batch, which represents a 20-fold increase in output compared to the earlier process. When the powder flowability was functionally tested using multiple standardized assays, the scaled-up powder was determined to be 2.4-fold more flowable. The measured moisture content was < 1%, indicating low potential for caking during storage. The CO_2 generation potential and hemostatic activity were highly preserved through scale-up, which predicts excellent efficacy for future *in vivo* studies.

Conclusions: Through a mixture of *in vitro* techniques and improved manufacturing methods, the CounterFlow formulation for managing NCTH was made more hemostatic

and flowable and can be generated in high quantities to supply future conflicts with massive casualties. These improvements to the product will facilitate delivery as a dry injected material using paracentesis technique and allow CounterFlow to achieve greater efficacy by activating blood clotting within the abdomen.

P137: National Capital Region: A journey towards improved evidence-based interdisciplinary chronic pain programming

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Program/Intervention Description: The Chronic Pain Centre of Excellence for Canadian Veterans network, the Pain Management Best Practices Inter-Agency Task Force Report, the National Institute for Health and Care Excellence Chronic Pain Assessment and Management Guideline, and the Canadian Pain Task Force Action Plan speak to a global priority to mobilize chronic pain best practices. Additionally, VanTil et al. (2017) reported chronic pain rate findings of 41% in veterans versus 22% in the general Canadian public, Thus, chronic pain management is a prioritized topic within Canadian Forces Health Services (CFHS) with impacts on individuals, families, activities, relationships, productivity, and healthcare utilization. When the Michael DeGroote Pain Clinic in Hamilton, Ontario offered to share their chronic pain best practices, the commanding officer of CFHS Centre Ottawa fully endorsed a coordinated and measured initiative.

CFHS clinicians in the National Capital Region (NCR) working at CFHS Centre Ottawa and CFHS Headquarters were invited to attend a free, six-week Interdisciplinary Pain Management Webinar Series covering 11 topics hosted via MS Teams.

Evaluation Methods: Participants were asked to complete bilingual, anonymous online surveys that were developed and administered using the tailored design method (Dillman et al., 2014). Survey links were sent to participants before the training began, after each session, and at the completion of the series. Simple descriptive statistics were used to analyze quantitative responses. Content analysis was used to analyze qualitative responses to an open-ended question. A WordCloud highlights local perceptions on enablers and barriers to interprofessional care.

Results: Fifty participants registered. The top four groups in attendance were physiotherapists (26%); mental health clinicians (20%); nurse case managers (16%); and primary care clinicians (12%). Despite various confounding variables, the best attended sessions were Exercise & Rehabilitation Approaches for Pain and Goal Setting (n=42) whereas the case study discussions were the least attended.

Notably, 91% of respondents reported an interdisciplinary pain program would be beneficial to CAF members with 55% highlighting an in-house program would be preferred to outsourcing CAF members to established civilian programs. Despite barriers being described, 81% of respondents agreed or strongly agreed to wanting to participate in multimodal, patient-centered, interdisciplinary programming.

Conclusions: This knowledge translation initiative facilitated a rapid distribution of evidence-based materials, across diverse interdisciplinary team players, during an unprecedented pandemic with minimal financial expenditure. Based on the small sample size findings, CFHS participants are knowledgeable, skilled and wish to foster improved biopsychosocial collaborations in achieving patient-centred, multimodal, interdisciplinary chronic pain program delivery.

P140: Implementation of Advanced Practice Physiotherapy via Telemedicine for Deployed Canadian Special Operations Forces Command Military Members

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Program/Intervention Description: Musculoskeletal (MSK) disorders are the leading causes of non-combat health issues in deployed Special Operations Forces (SOF) members. During deployment, soldiers commonly neglect and/or inappropriately treat their MSK injuries leading to chronicity and negatively affecting their operational readiness and careers. Considering the small footprint of SOF deployments, having a physiotherapist on site at all times is not cost-effective. Telemedicine has been used in the military since 1980 and has been proven to save time and reduce cost. In the case of MSK injuries, an advanced practice physiotherapy (APP) telemedicine assessment, where a physiotherapist with enhanced training independently manages the condition, could positively affect the course of an injury, reducing risk of chronicity and further negative impact on Canadian Special Operations Forces Command (CANSOFCOM). The aim of this presentation is to describe the steps of implementation of telemedicine APP model for deployed CANSOFCOM military personnel who sustain a simple MSK injury using the PEPPA framework.

Evaluation Methods: The PEPPA framework, a participatory, evidence-based, patient-focused process, was used for guiding the development, implementation, and evaluation of this new model of care. Stakeholders were involved from the beginning of the APP telemedicine project, identifying barriers and facilitators throughout the implementation.

Results: To date, seven steps of the framework have been completed leading to updated Special Operations Medical Technician (SOMT) course curriculum, video resources produced and provided to SOMTs as well as presentation of APP telemedicine model at key touch points of the deployment and instruction cycle of one CANSOFCOM unit. The strategies, lessons learned, education material and resources related to this project have been shared with CANSOFCOM physiotherapists who are now regularly using telemedicine in primary care for MSK conditions for their deployed members.

Conclusions: A participatory, patient-focused approach was successfully used to implement a new model of care for CANSOFCOM deployed military personnel. Should the long-term evaluative portion of this APP telemedicine intervention provide positive results with regards to operational readiness, this model of care could be expended to the CAF and optimize the career longevity of its military members.

P141: Evaluation of the Onboarding Process for Occupational Therapists in Canadian Forces Health Services

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Program/Intervention Description: In 2021, Canadian Forces Health Services (CFHS) received approval to hire 30 occupational therapists (OT), increasing the number of OTs in CFHS clinics from four to 34. Their role is to enhance the recovery and support return-to-duty (RTD) of patients suffering from predominantly physical conditions. Six of the 30 new positions will be dedicated for OTs with a mental health focus.

To optimize the self-efficacy of a large number of new OTs with no or minimal experience in providing care to CAF members, headquarter personnel designed a comprehensive orientation process. The process included an information package and 13 virtual instructor-led training sessions on healthcare priorities in the CAF, care entitlements, and collaboration with stakeholders.

A trial of the onboarding process was conducted with the first group of OTs hired. Instructor-led sessions were provided on two occasions (spring and fall 2022). Participation was voluntary and all OTs were welcome to attend. The information package was uploaded on SharePoint for reference.

Evaluation Methods: The impact of the onboarding process was assessed using a self-administered questionnaire comprising 10 closed-ended and seven open-ended questions. The closed-ended questions assessed the satisfaction with the orientation process on a 6-point Likert scale. The open-ended questions addressed the usefulness of the orientation,

recommendations, job challenges and highlights. Responses were grouped by theme.

Results: Ten of the 30 OTs were hired and participated in the onboarding process. Five of the 10 OTs returned the completed questionnaire. Overall, satisfaction with the orientation process was rated at an average of 94.3% (range 88.3-100.0%). The mean satisfaction score regarding the training content was 92.7 %. The mean score for the impact on their ability to achieve self-efficacy was rated at 90.0% (range 66.7-100.0%).

On average, OTs attended 10 of the 13 instructor-led presentations. Regarding highlights, OTs mentioned the diversity of their job, the quality of support received, and the collaboration with others. Recommendations included timely delivery of training and prioritization of important job-specific references in the resources. Challenges included familiarization with the military context and workload.

Conclusions: The trial of the onboarding process suggests that OTs were generally satisfied with the resources provided and the delivery format. Their feedback provided key information for improvements of the process and inclusion of additional resources for the next group of OTs.

P144: Post-reconstitution hemostatic stability profiles of Canadian and German freeze-dried plasma

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Introduction: Freeze-dried plasma (FDP) is a promising blood component for hemostatic resuscitation in far-forward combat and austere environments given its logistic advantages over liquid blood products. While FDP can be stored at room temperature for up to 2 years its stability after reconstitution is unknown. Although guidelines suggest that reconstituted German FDP (LyoPlas) should be used within six hours, further information is necessary. Thus, it is crucial to investigate the stability of FDP after reconstitution and exposure to extreme temperatures for its optimal use in the field.

Methods: We evaluated the short- ($\leq$24 h) and long-term ($\geq$168 h) hemostatic stabilities of Canadian FDP (CFDP) and LyoPlas, respectively, after reconstitution in sterile water under different storage temperatures and conditions (static or rocking). We conducted global hemostatic tests and specific factor assays using rotational thromboelastometry (ROTEM) and Stago analyzer, respectively.

Results: When compared to the initial reconstituted

CFDP, there were no changes in INTEM maximum clot firmness (MCF), EXTEM clotting time (CT) and MCF, and Stago measurements for prothrombin time (PT), partial thromboplastin time (PTT), D-dimer concentration, plasminogen and protein C activities after storage at 4°C for 24 h and room temperature for 4 h. However, an increase in INTEM CT and decreases in fibrinogen concentration, factors V and VIII, and protein S activities were observed after storage at 4°C for 24 h, while decreases in antithrombin and protein S activities were seen after storage at room temperature for 4 h.

Evaluation of the long-term stability of reconstituted LyoPlas showed decreased stabilities in both global and specific hemostatic profiles with increasing storage temperatures, particularly at 35°C, where progressive changes in CT and MCF, PT, PTT, fibrinogen concentration, factor V, antithrombin, protein C and protein S activities were seen even after storage for 4 h. These changes were much faster compared to those observed at 22°C and below. Moreover, a comparison of the hemostatic properties between static and rocking conditions at 22°C demonstrated that rocking reduced stability.

Conclusions: We confirmed the short-term stability of CFDP in key hemostatic properties after reconstitution and storage at room temperature, consistent with the shelf life of reconstituted LyoPlas. The long-term stability analyses of reconstituted LyoPlas suggests that the post-reconstitution hemostatic stabilities of FDP products would decrease over time with increasing storage temperature, with a significant loss of hemostatic functions at 35°C compared to 22°C or below. Therefore, the shelf life of reconstituted FDP should be recommended according to the storage temperature.

P146: Experience in Canadian Armed Forces Breachers reduces the negative impact of repetitive low-level blast exposures on rule-based visuomotor skill

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Introduction: Military breachers use controlled explosions to blast through barriers for rapid entry. Breacher instructors are exposed to hundreds of low-level blast events. The relationship between long-term occupational exposure to low-level blast overpressure and human health is not well understood. However, the overlap in concussion-like symptom reports from breachers raises concerns that this exposure may produce adverse neurological effects. Using a visuomotor task that involves conditions where the individual has to think and move at the same time (cognitive-motor integration, CMI), our group has previously reported deficits in asymptomatic breacher instructors. We have also observed that experience can

mitigate skilled performance impairment in those affected by concussion. Here we compare the impact of repetitive low-level blast exposures on CMI in novice and experienced groups of Canadian Armed Forces (CAF) breachers before and after a training course, relative to CAF non-breachers.

Methods: Data were collected from 11 breachers before and after course participation (mean age 30±3.2 years), and 11 CAF member control participants tested at the same time intervals (mean age 35±9.1). Study participants (all male) were tested on two different eye-hand coordination tasks. Participants slid their finger from a central target to one of four peripheral targets on a tablet computer. They viewed the targets on the top half of the tablet while moving their finger on the blank bottom half of the tablet, while the cursor feedback was 180o reversed. Thus, the required hand motion and hand location was decoupled from guiding visual information, requiring CMI.

Results: A mixed-ANOVA (factors: time/group) revealed a main effect of time, with slower reaction times post-course (p<0.05). However, the TimeXGroup interaction only showed a trend (p=0.06). We also observed greater variability in reaction time (p<0.01) and precision (p<0.05) in the breacher group relative to controls post-course. Within the breacher group, we observed greater variability in accuracy and precision measures (p<0.05) post-course in the novice, but not the more experienced, breachers.

Conclusions: The effect of blast exposure on CMI performance observed in the breacher group longitudinally is consistent with previous cross-sectional reports on breacher instructors, as well as work on athletes with concussion history. Within the breacher group, the mitigating effect of experience in highly trained breacher instructors suggests resilience in the rule-based visuomotor control brain networks, which may provide protection/compensation for potential CMI deficits brought on by low-level blast exposure.

P149: Initial 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). One solution is strength and conditioning programs (Ang, 2009; Salmon, 2011). 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). With direction from CFEME, the RCAF adopted a modified ACP at 408 Tactical Helicopter Squadron (THS) and 2 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: Evaluation included objective (physiotherapy, fitness assessments) and subjective (surveys) metrics to determine (1) effectiveness, and (2) feasibility to implement a similar program across the RCAF. Metrics were collected at baseline and 3,6,9 and12 month intervals. Effectiveness was determined by physical testing and survey responses. Program feasibility was assessed via:(1) resource utilization and CAF personnel availability, (2) compliance, and (3) evolutions to the program.

Results: From baseline to 3-months, 408 THS aircrew improved deep neck flexor muscle (DNF) endurance by 26.4s, but decreased by 17.1s from 3 to 6-months. At 2 CFFTS, DNF improved from baseline to 3-months by 28.4s and 44.6s (Group 1 & 2, respectively), and improved from 3-6 months by 22.1s and 11.71s (Group 1 & 2, respectively). At 408 THS, compliance was highest in week 1 at 56%, decreasing to 5% in week 12 and <5% in week 24. At 2 CFFTS, compliance in Groups 1 & 2 was 94% and 92% in week 1, 47% and 79% in week 12 and 33% and 71% in week 24, respectively.

Conclusions: Objective testing suggests that the RCAF ACP is effective after 12 weeks of training. However, effectiveness is reliant on compliance. Low compliance prevented program progression at 408 THS. The structured environment at 2 CFFTS facilitated better attendance/compliance. Challenges included scheduling, limited ability to progress and the perceived risk of injury/grounding. Future work must include additional efforts to identify/remove barriers, maximizing participation. The updated program will allow for progression/regression, facilitating more flexibility and individually tailored training, while remaining within the evidence-based framework of the original ACP. While awaiting implementation of the RCAF ACP, all aircrew are encouraged to follow a conditioning program which focuses on total body/core fitness, and supervised isometric neck-specific exercises.

P152: Combat Vascular Access: A Scoping Review

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Introduction: Adequate combat trauma resuscitation requires efficient vascular access. The 2021 TCCC guidelines state "If vascular access is needed but not quickly obtainable via the intravenous (IV) route, use the intraosseous (IO) route."; however, there is no specific outline on the number of attempts or time elapsed before attempting IO. Tactical environment, enemy threats, and limits on available transportation may necessitate prolonged field care interventions such as tranexamic acid (TXA), freeze-dried plasma and blood products to be administered by the combat prehospital provider near the point of injury. Our team completed a scoping review of prehospital combat trauma studies summarizing the efficacy, provider level of training, and complications observed for IV, IO (tibial, humeral and sternal) and central venous access procedures in combat environments. Data collection, analysis and results are complete. The primary goal for this study was to provide a recommended best-evidence approach to combat casualty vascular access for the prehospital provider. We propose an algorithm for vascular access based on the results of our study.

Methods: Our study design was a scoping review. We conducted a search in MEDLINE and EMBASE databases. Searches were restricted to humans and adults. Studies of vascular access performed in the prehospital combat environment were included. Studies were excluded if the patients were less than 18 years old, if it was an animal study, or if it was a case report or review article. The type of access obtained, type of provider performing the intervention, success and complication rates were recorded. Studies were subject to a title, abstract and full text review for inclusion.

Results: The search resulted in 1339 studies, and 24 studies were included after full text review. Success rates were as follows: Peripheral IV (82-100%, 3 studies), IO with unspecified location (76-98.3%, 3 studies), tibial IO (50-97%, 5 studies), humeral IO (83.3%, 1 study), sternal IO (79.2-79.6%, 2 studies). No success rates were reported for central lines. Various provider types performed these interventions. Complications were described for tibial, humeral and sternal IOs of varying significance.

Conclusions: This scoping review suggests that IV cannulation is the preferred method of pre-hospital vascular access in the combat environment. IO techniques should be used as rescue interventions. Tibial site for IO catheterization should be favoured unless complicating factors are present. Future research should attempt to capture success rates to guide and refine military medical prehospital resuscitation.

P155: Machine learning feature selection and predictive modelling for optimal blood transfusion

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Toronto; [3]Sunnybrook Health Sciences Centre; [4]St. Michael's Hospital; [5]Royal Canadian Medical Services

Introduction: Massive hemorrhage remains the main cause of preventable death on the battlefield. Although a presumptive ratio-based transfusion of blood products (red blood cells (RBC), plasma, etc) have been recommended for hemostatic resuscitation after combat injuries, it does not represent a precision-based therapeutic approach to optimal transfusion strategy for individual patient. With the AI (artificial intelligence)/ML (machine learning) powered modern data science techniques, it is possible to build predictive models to assist the decision-making process to achieve optimal blood transfusion. The current study aims at building clinical data-driven AI model prototypes for predicting optimal RBC and plasma transfusions.

Methods: The objective was to use demographic, physiological, and baseline lab biochemical features to model RBC and plasma transfusions. ML modelling was conducted for RBC and plasma transfusions separately. A trauma patient cohort (full survivability) was featured (N=35). We used a CV-rRF-FS-SVR (cross validation with recursive random forest feature selection and support vector regression) algorithm for feature selection (FS). Ten-fold nested CV process was used for FS and modelling. Final selected features were determined by a vote process over the features selected by each FS fold. Ultimately, final SVR models were built with the selected features. Model performances were determined by RMSE (Root Mean Square Error) and a permutation test. Partial least squares regression (PLSR) modelling with permutation was used to independently evaluate the versatility of selected features.

Results: For the RBC model, *fibrinogen level, FIBTEM_MCF (maximum clot firmness) and maximum lysis (ML), International Normalised Ratio (INR), and Injury Severity Score* (ISS) were selected as the most important features. The final model led to a model RMSE=3.65, with a permutation p=0.03 (significant). Next, *fibrinogen level, INR, EXTEM_CT and ML, FIBTEM_MCF and ML, functional fibrinogen Thromboelastography maximum amplitude (FF_TEG_MA),* and *ISS* were identified as the most important features for the plasma model. The model performance metrics were as follows: final model RMSE=2.25, permutation p=0.04 (significant). Features selected for both models also resulted in significant PLSR models.

Conclusions: This study exhibited the viability of building ML model to predict optimal transfusion requirements for RBC and plasma. Even with a relatively small sample size, most important features were identified to build predictive regression models for RBC and plasma transfusions, with promising performances. We provided evidence to potentially AI-assisted transfusion decision-making process. As such, further development of the ML models using large datasets in comparison with current transfusion algorithms is warranted.

MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

2A01: The Canadian Armed Forces Health Survey Methodology

***Strauss, Barbara, MSc[1]**; Bogaert, Laura, MSc[1]; Clair, Veronic, MD, PhD[1]*

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Introduction: The Canadian Armed Forces (CAF) Health Survey (CAFHS) is a voluntary population-based cross-sectional survey conducted every four to five years to provide a snapshot of the overall health status of CAF personnel and to inform program and policy development. In 2019, the CAFHS was administered electronically in collaboration with Statistics Canada, replacing the paper-based mail Health and Lifestyle Information Survey (HLIS). Discussing methods is relevant to improve health monitoring especially given the CAFHS data is accessible through Statistics Canada.

Methods: The previous questionnaire was revised to retain content from the HLIS for comparison purposes and to improve several sections while reducing average completion time to 45 minutes. Questions on general health, mental health, substance use, behaviours and conditions, injuries, health care utilization, preventive screening, and occupational and deployment health were included. The self-completed questionnaire underwent qualitative testing to ensure face and content validity. A total sample of 33,000 actively serving Regular Force personnel stratified by age, sex, and military bases/wings were randomly selected to obtain base level estimates of +/- three percent within base, and +/- six percent at the age group and sex level. Data were weighted using the inverse probability of selection and adjusted for non-response. Survey variables were analyzed by age, sex, rank, base/wing, and command using bivariate statistics and tests of significance to identify associations at an error threshold of p<0.05.

Results: Overall, 13,065 (39.6%) Regular Force personnel completed the survey. Male junior non-commissioned members were least likely to respond (28.6%) and female senior officers were most likely to respond (57.5%). Response rates varied substantially across bases/wings, ranging from 30.6% to 50.2%. Despite the larger number of respondents compared to previous HLISs, there are a number of limitations, including the effect of non-response bias. As well, the difference in survey mode administration can influence survey estimates and comparisons between the CAFHS and other surveys should be interpreted with caution. Additionally, social desirability bias can influence self-report responses and lead to under/over reporting. Multivariable analyses are required to control for confounding factors to more clearly elucidate the relationships of interest seen in bivariate analysis.

Conclusions: The CAFHS 2019 is a valuable source of information that covers a variety of factors that influence the health and wellbeing of CAF personnel. CAFHS data could be used to address further research questions and is available through Statistics Canada's Research Data Centres. Understanding the methodology will facilitate further data analysis and interpretation accordingly.

2A02: Deployment Health: Findings from the 2019 Canadian Armed Forces Health Survey

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Introduction: Canadian Armed Forces (CAF) personnel deploy on overseas operations as part of Canada's contribution to international peace and security. Factors across the deployment experience spectrum, from pre-deployment to post-deployment, involve stressors and risks that could impact health, well-being, deployability, and operational readiness. The CAF Health Survey (CAFHS) is a population-based health survey providing a snapshot of the overall health status of CAF personnel. The purpose of this analysis was to assess factors affecting the deployment experience in active Regular Force personnel.

Methods: The CAFHS is a voluntary electronic population-based health survey providing a snapshot of the overall health status of CAF personnel. The CAFHS 2019 was administered in collaboration with Statistics Canada from January to June 2019. Results were weighted to the Regular Force population distribution and analyzed to produce stratified frequencies in the form of descriptive tables and figures and regression analyses were conducted to assess relationships of interest with tests of significance to identify associations at an error threshold of $p < 0.05$.

Results: Within the past two years, 27.7% of personnel reported not being able to deploy with the most common reasons being musculoskeletal injuries (32.6%) and mental health issues (24.0%). Males were more likely to report musculoskeletal injuries (33.6%) and mental health (24.8%) issues than females (28.7% and 21.0%, respectively); however, more females reported that they were on leave (10.3%) compared to males (4.8%). Further, 15.9% of female personnel unable to deploy reported pregnancy. Male, older, and senior ranking personnel were more likely to report having ever been deployed. Male and older personnel were also more likely to report three or more deployments in the past two years. In the past two years, most deployed personnel worked "inside the wire" (i.e., lower threat locations) (53.4%) as opposed to "outside the wire" (i.e., higher threat) (27.3%) or *other* locations (19.4%). Although roughly one-quarter of personnel reported difficult adjustment to family (28.4%) or work (23.0%) life post-deployment, females, NCMs, and older personnel reported more difficulty.

Conclusions: The results indicate that musculoskeletal injuries and mental health have continued to be the most common medical reasons preventing deployment. Additionally, notable differences by sex, age, and rank across deployability restrictions, deployment histories, and post-deployment adjustment highlight an opportunity to improve health and wellbeing by further examining health-related reasons preventing deployment; the role of the operational environment; and post-deployment experiences in the context of other health factors.

2A03: Current Trends in Regular Force Members' Alcohol Use: Findings from the 2019 Canadian Armed Forces Health Survey

Therrien, Megan, MA[1]; *Clair, Veronic, PhD[1]; Strauss, Barbara, MSc[1]; Pearce, Keith, PhD[1]*

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Introduction: Alcohol consumption can increase risk of severe health consequences, disability, and even death, as highlighted by the newly released Canadian Guidance on Alcohol and Health. There is greater health risk due to alcohol use, and risks at lower consumption levels than previously thought (Paradis, 2023). Despite these risks, recent data revealed that 76% of Canadians aged 15+ reported drinking alcohol in the previous year (Health Canada, 2021). Canadian Armed Forces (CAF) members typically report higher proportions of drinkers than the general population (Theriault et al., 2016), and considering the recent updated guidelines, this analysis examines current trends in alcohol consumption, including higher risk drinking behaviours, among Regular Force personnel in the CAF.

Methods: The CAF Health Survey (CAFHS) is a voluntary electronic population-based health survey providing a snapshot of the overall health status of CAF personnel and was administered in collaboration with Statistics Canada from January to June 2019. Scales assessing alcohol use patterns, alcohol abuse and alcohol dependence were based on those used in the 2012 Canadian Community Health Survey: Mental Health. Results were weighted to the 2019 Regular Force population distribution and analyzed to produce stratified frequencies in the form of descriptive tables and figures and regression analyses were conducted to assess relationships of interest.

Results: The vast majority (94%) of CAF members reported consuming alcohol in the previous year, with 80% being classified as regular drinkers (defined as consuming alcohol once or more monthly over the previous year). Examination of psychosocial variables revealed that these drinkers were more likely to be young males.

Higher risk alcohol consumption patterns were also examined. One-third (33%) reported binge drinking (defined as consuming 5 or more drinks on one occasion) at least monthly, with 9%

binge drinking at least once per week. 7% of members screened positive for lifetime alcohol dependence (including symptoms of increased tolerance, withdrawal, increased consumption, unsuccessful attempts to quit, time lost, reduced activities, continued drinking despite physiological and/or psychological problems). 2% of members screened positive for alcohol dependence in the past year, with younger male junior Non-Commissioned Members more likely to meet the screening criteria than their counterparts.

Conclusions: The recently released Canadian Guidance on Alcohol and Health indicates there is far greater risk from alcohol use than previously believed. These findings on CAF Regular Force personnel's drinking habits suggest higher risk drinking behaviors are prevalent. The findings will be used to inform CAF health promotion guidance on alcohol use.

3D03: The Underlying Mechanisms by which Post-Traumatic Growth is associated with Cardiovascular Health in Male United Kingdom Military Personnel: The ADVANCE Cohort Study

Dyball, Daniel, PhD[1]; Bennett, Alexander, PhD[2]; Schofield, Susie, MSc[3]; Cullinan, Paul, MD[3]; Boos, Christopher, PhD[4]; Bull, Anthony, FREng[3]; Stevelink, Sharon, PhD[1]; Fear, Nicola, DPhil(OXON)[1]

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Introduction: Post-Traumatic Growth (PTG) is the experience of beneficial psychological growth following trauma and has previously been shown to be associated with better physical health. The mechanisms by which this occurs are poorly understood, and the positive psychology literature is sparse with examples of associations with objective measures of health, such as cardiometabolic effects (e.g. cholesterol), haemodynamic effects (e.g. heart rate) or inflammation (e.g. High Sensitivity C-Reactive Protein). This study sets out to examine whether factors of PTG are associated with cardiovascular health in the ADVANCE study cohort, a cohort of injured/uninjured UK military personnel.

Methods: This cross-sectional analysis uses novel variable selection methodology (bootstrap inclusion frequencies and model averaging) and robust regression modelling to assess whether factors of PTG (Appreciation of Life, New Possibilities, Personal Strength, Relating to Others and Spiritual Change) as measured by a military deployment variant of the Post-Traumatic Growth Inventory, are associated with cardiovascular health including cardiometabolic effects, haemodynamic functioning and inflammation in a cohort of male UK military personnel. Objective measures of cardiovascular health were obtained from blood samples, Vicorder assessment (pulse wave analysis) and Dual-Energy X-ray Absorptiometry. Analysis was performed on 1006 participants (median age 34).

Results: The findings suggest that factors of PTG are associated with mostly positive cardiometabolic effects/haemodynamic functioning including lower diastolic blood pressure (Coefficient (CE) -0.286 (95%Confidence Interval (CI)-0.501, -0.032), higher 'good' cholesterol (CE 0.423 (CI 0.073, 0.804), lower 'bad' cholesterol (CE -0.577 (CI -1.205, -0.004)), and lower levels of triglycerides (CE 0.981 (CI 0.969, 0.993)). However, some factors of PTG were also associated with negative indicators of cardiovascular health such as lower levels of 'good cholesterol' (CE -0.359 (CI -0.617, -0.108)) and higher levels of blood sugar (CE 0.178 (CI 0.058, 0.298)). No factors were associated with inflammation. Almost all associations remained statistically significant even when excluding those with mental illnesses.

Conclusions: PTG was associated with mostly positive cardiovascular health indicators, however some notable negative associations also existed. Importantly, the fact that associations remained even after excluding those with mental illness suggests that PTG is measuring more than just the absence of mental illness.

This paper highlights how positive psychological functioning is associated with objective measures of physiological health, and we discuss the potential direction of future research to understand why both positive and negative associations were observed.

4B03: Canadian Forces Cancer and Mortality Study, 1976-2016

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Introduction: The Canadian Forces Cancer and Mortality Study (CFCAMS) is an ongoing collaborative research project between the Department of National Defence and Veterans Affairs Canada. The goal of the project is to better understand the effects of military service on long-term mortality and cancer outcomes, both in-service and after release. The goal of this analysis is to investigate the causes of death in the CFCAMS cohort and to compare rates of mortality between the cohort and the Canadian General Population (CGP). Preliminary results are presented.

Methods: The CFCAMS cohort was created via data linkage of Canadian Armed Forces (CAF) remuneration and human resources records to the Canadian Vital Statistics – Deaths Database. Linkage was produced by Statistics Canada using deterministic and probabilistic linkage methods.

The CFCAMS cohort included Canadians with a history of service in the Regular Forces and/or Reserve Forces with class C contract. Individuals were included if they first enrolled in

the CAF as of January 01, 1976. Observation ended December 31, 2016.

Causes of death were standardized to ICD-10 for analysis. All-cause mortality and cause-specific mortality, determined at the ICD-10 chapter level, were compared to the CGP using age-standardized and sex-stratified mortality ratios (SMRs) and 95% confidence intervals.

Data for the CGP were obtained from the Statistics Canada public use data and annual mortality reports. Missing data were managed using multiple imputation.

Results: The top three causes of death in the CFCAMS cohort were attributable to external causes of mortality, neoplasms, and diseases of the circulatory system.

Preliminary age and sex-standardized SMRs for all-cause mortality compared to the CGP were significantly lower than 1 for the whole cohort and when stratified by sex, indicating a lower risk of early mortality.

The only SMR significantly above 1 when investigating cause-specific mortality was attributable to external causes of mortality. External causes of mortality are an area of interest for future analyses as they are not a top cause of death in the CGP and are the only source of excess mortality when comparing the CFCAMS cohort to the CGP.

Conclusions: As observed previously, service in the CAF has a protective effect against early mortality, for all causes and the majority of specific causes compared to the CGP. This has been described as the healthy soldier effect. This occurs when health screening on recruitment, as well as health and fitness-based employment requirements create a selection of healthier individuals in military cohorts.

4E01: Descriptive results from the 2019-2021 Canadian Armed Forces Recruit Health Questionnaire

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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"). This study focused on recruits who began basic military training between 2019 and 2021. Four key aspects of health were examined: health status and prevalence of health conditions, health behaviour, psychological disposition, and social environment. The indicators of health from the 2019-2021 RHQ cohort were compared to the 2016-2018 RHQ

cohort.

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 5,931 recruits completed the RHQ between January 2019 and December 2021. The 2019–2021 RHQ participants primarily consisted of Non-Commissioned Member (NCM) candidates (78.2%) and men (81.7%). The majority were under 25 years of age (55.7%).

Results: Recruits in the 2019–2021 cohort groups had generally favourable health status, health behaviours, and lifestyles. However, there was a slight decrease across some health and lifestyle measures in 2019 and 2020 relative to the 2016-2018 cohorts. Key findings included decreases in physical activity and less favourable psychological dispositions. Demographic differences were also noted among the 2019–2021 cohort: NCM recruits, those with lower education, and those with lower household incomes generally had poorer health outcomes. Age and gender differences were also noted.

Conclusions: Overall, recruits who enrolled in 2019- 2021 had relatively favourable health profiles, albeit slightly less favourable health and psychological dispositions than the 2016–2018 recruits. Fortunately, there were signs of stabilization on some factors in 2021, suggesting a return to pre-pandemic levels. These comparisons should be interpreted with caution, as the COVID-19 pandemic and personnel shortages significantly limited recruitment and RHQ data collection capacities in 2020 and 2021. 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.

5C03: Multi-Omics and machine learning analysis lead to effective molecular mechanism characterization and biomarker discovery for long-term exposure to low-intensity repeated blast overpressure

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Introduction: Military occupational exposure to low-intensity repeated blast overpressure (ReBOp) is associated with progressive neurological dysfunction, often without the

presence of symptomatic brain injury or clinical diagnosis. Canadian Armed Forces (CAF) breachers and snipers are routinely exposed to ReBOp during training and operations, leading to potentially harmful neurological impairment, neuropsychiatric disorders, and neurobehavioural sequelae. However, the impact of long-term ReBOp exposure has yet to be fully studied, with a lack of specific molecular biomarkers for diagnostic, prognostic and intervention planning purposes. Aiming to sustain CAF members' brain health and operational readiness, this study focuses on characterizing career ReBOp exposure effects and identifying potential biomarkers via blood and saliva molecular multi-Omics data and comprehensive bioinformatics approaches.

Methods: For blood gene expression profiling, we compared snipers to healthy CAF controls (both N=9), whereas salivary miRNA screening compared a combined cohort of snipers and breachers (N=38) with CAF controls (N=24). Next generation sequencing RNA-seq methods were used. Polaris Genomics' TruGen-1 platform was used for the blood gene expression, while the salivary miRNA screening was conducted via Ilumina-based small RNA RNA-seq. The TruGen-1 RNA-seq panel features 1,003 brain health and neuropsychiatric pathway-related genes, including several verified PTSD biomarkers. Whole-blood DNA methylation profiles were also assessed via Illumina's Infinium MethylationEPIC platform. DRDC in-house bioinformatics pipelines were used for data analysis, including differential expression, pathway analysis and machine learning (ML) gene selection. To assess the career ReBOp exposure effects, analyses of the breacher/sniper group were conducted without any recent acute exposure.

Results: ML gene selection identified 15 peripheral blood genes potentially capable of serving as biomarkers for military occupational ReBOp effects. Pathway analysis revealed dysregulation of multiple immuno-inflammatory signaling pathways, neural transmission, and elevated antioxidant defence that may be linked to long-term exposure to ReBOp. For the salivary miRNA, ML gene selection was also the most effective means of identifying miRNA targets that represent career ReBOp effects. MiRNA pathway analysis exhibited neural function dysregulation and stress signal transduction activation in the operator cohort. Peripheral blood DNA methylation signatures were also identified for career ReBOp exposure effects.

Conclusions: This multi-Omics approach revealed not only molecular mechanisms for military occupational ReBOp exposure effects, but also identified promising blood and salivary biomarkers. Moving forward, our goal is to develop AI/ML algorithms to fully characterize ReBOp exposure, aiming to achieve effective diagnostic, prognostic and interventional strategies to mitigate harmful effects of ReBOp in CAF members.

5D01: Suicidal Ideation in Male United Kingdom Military Personnel Deployed to Afghanistan and the Role of Combat Injury, Mental Illness and Health-Related Quality of Life: The ADVANCE Cohort Study

***Dyball, Daniel, PhD**[1]; Schofield, Susie, MSc[4]; Williamson, Charlotte, MSc[1]; Bennett, Alexander, PhD[2]; Boos, Christopher, PhD[3]; Cullinan, Paul, MD[4]; Bull, Anthony, FREng[4]; Fear, Nicola, DPhil(Oxon)[1]*

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Introduction: Suicide is a leading cause of death amongst young men. During the UK involvement in the Afghanistan conflicts, UK military personnel survived more substantial physical combat injuries compared to any previous military deployment in history. It is unknown whether these individuals might experience more suicidal ideation as a result of their injuries. Investigations suggest that aspects such as health related quality of life (e.g. pain and mobility/physical symptoms) and mental health might mediate such a relationship.

Methods: This study utilises the ADVANCE cohort, a cohort of physically injured UK military personnel who sustained injuries in Afghanistan and a frequency matched uninjured group.

Structural Equation Modelling utilising item response theory was employed to assess whether sustaining combat injuries was associated with suicidal ideation. Suicidal ideation was measured primarily from the item "feelings of being better off dead or of hurting yourself in some way" from the Patient Health Questionniare-9, and a latent construct of SI was generated supported by an additional item "Feeling as if your future will somehow be cut short" from the Post-Traumatic Stress Disorder (PTSD) Checklist (PCL). Three mediation models were constructed: a pain model, a mobility/physical symptom model and a mental health model including depression and PTSD.

Results: Early analysis indicates that 61 (11.9%) of the uninjured group, 83 (15.3%) of the overall injured group, 13 (8.5%) of the amputation injured subgroup and 70 (17.6%) of the non-amputation injured subgroup reported any suicidal ideation in the past two weeks. Mediation analysis was limited to those who sustained a non-amputation injury due to small numbers of those with amputation injuries experiencing suicidal ideation. Sustaining a non-amputation physical combat injury was associated with greater rates of suicidal ideation compared to those who deployed and were uninjured. This association was partially mediated by pain and mobility issues. Mental health fully mediated this association.

Conclusions: This is an interpretation of early analysis which should be completed in the coming months. Those who sustained an amputation injury had very low rates of suicidal

ideation, whereas those who sustained a non-amputation injury reported greater rates of suicidal ideation compared to the uninjured comparison group. The impact of combat injury on mental health appears to be the most important to consider, though experiences of pain and mobility/physical symptoms also have considerable impact on suicidal ideation in this cohort.

6A02: Correlates of increased cannabis consumption by CAF members during the COVID-19 pandemic

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Introduction: The early days of the COVID-19 pandemic were a complicated and stressful time for many, disrupting daily routines, causing financial worries, impacting mental health, and affecting health behaviours. One health behavioural change that was observed in the Canadian general population was an increase in substance use, including alcohol and cannabis. The Canadian Armed Forces (CAF) were not immune to these early effects of the pandemic and members similarly showed increases in cannabis use in the period shortly after the beginning of the pandemic (Goldenberg et al., 2020). The current research examines these changes in cannabis use and the psychosocial and demographic factors correlated with an increase in cannabis use among CAF members.

Methods: The Canadian Defence Team COVID-19 Survey was developed to provide insight into Defence Team members' experiences and needs during the early part of the pandemic. Included in the survey were items asking about changes in substance use behaviour, including cannabis use, stressors related to COVID-19, and numerous mental health indicators. The survey was completed by 13,688 Regular Force members between April and May 2020, with the data weighted to be representative of the population.

Results: Of those who reported consuming cannabis, a small majority (55%) reported no change to their cannabis consumption (*No Change Group*), with 34% reporting increases in use (*Increase Group*) and only 11% reporting decreases. A closer examination of the *Increase Group* reveals they are more likely than the *No Change Group* to be younger (<35), Junior members (both non-commissioned members and officers), and single, divorced, or widowed, with no dependent children. The *Increase Group* revealed differences in mental health factors as well, being more likely to report anxiety symptoms, depressive symptoms, increased stress and psychological distress, overall worsening physical and mental health, and poorer sleep quality. Finally, the *Increase Group* was more likely to report having significant concerns about the impacts of the pandemic on numerous aspects of their personal, family, social, and work lives (e.g., relationship conflict, delayed career development, financial challenges).

Conclusions: Results reveal that one-third of CAF Regular Force members who already consumed cannabis increased their consumption during the early days of the COVID-19 pandemic. Increases in cannabis consumption were associated with numerous detrimental mental and physical health concerns, and several concerns related to the pandemic's effect on all aspects of Regular Force members' lives. Efforts to support the CAF during difficult transitions should consider potential negative coping behaviours, such as cannabis consumption.

7B03: How does virtual reality compliment clinical care: an Ottawa perspective

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Program/Intervention Description: Virtual reality combined with a six degree of freedom treadmill is an integral part of rehabilitation. Previous literature on VR rehabilitation has shown functional improvements, but standard guidelines on how to integrate VR technology into clinical care have yet to be established. The CAREN VR system has been used for more than 10 years among military and civilian clinicians to address treatment goals such as balance/spatial orientation, vestibular and gait training, dual-task training, pseudoneglect, and graded sensory integration. To capture the valuable expertise gained through clinical pattern recognition, a user survey was distributed to military and civilian clinicians using VR in their clinical care. The findings will assist with knowledge translation for refinement of VR assessment and treatment.

Evaluation Methods: Physiotherapists, social workers, and occupational therapists at the Canadian Forces Health Services and The Ottawa Hospital, who use the CAREN VR system, were invited to participate in a survey querying how the VR is used as a component for treatment and how this technology improved care.

Results: Eight clinicians responded, representing physiotherapists and occupational therapists from military and civilian practice areas. They reported that VR provided a multi-domain environment for clinical assessment of novel balance challenges as well as visual field, visual flow, spatial, and navigation deficits. VR also provided more opportunities to challenge patients and magnify subtle deficits. Clinicians reported that VR complimented standard care by providing an ideal environment to assess multi-task performance, spatial deficits, and hypervigilance; provide direct visual feedback on rehabilitation task; and provide a safe environment for reactive balance and visuovestibular training that would either be difficult to implement or cannot be mimicked in a clinic. Key lessons learned included 1) use a greater variety of clinical

outcome measures to capture more issues, 2) identify specific VR rehabilitation goal(s) for optimal outcomes, and 3) be mindful of cognitive fatigue and overdosing on treatment.

Conclusions: The findings of this survey highlighted VR clinical inclusion and exclusion criteria, how VR compliments clinical practice, and explored how VR informed practice growth as well as creating opportunities for co-discipline treatment. The clinical perspective presented will provide therapists new to VR rehabilitation key lessons learned for its successful integration into standard clinical care.

7B05: Strengthening the Canadian Armed Forces: Key Findings from Interviews with Health Promotion Experts

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[1]*Department of National Defence;* [2]*Public Health Agency of Canada*

Program/Intervention Description: Health and well-being is important for Canadian Armed Forces (CAF) members' quality of life and is critical to the operational readiness and effectiveness of the organization. The Strengthening the Forces (StF) health promotion program is the primary health promotion program for CAF members. Program evaluations of individual health education courses included in the program have produced promising results, but the broader program has not been examined as a whole. A mixed-method Situational Assessment of the StF program was initiated in 2018 to fill this gap with multiple lines of inquiry, including interviews with key stakeholders. The results of interviews with StF subject matter experts and staff will be the focus of this presentation.

Evaluation Methods: In-depth, semi-structured interviews were conducted with six subject matter experts and staff from the national headquarters of the StF program. All interviews were voluntary and were conducted virtually between December 2020 and February 2022. Interview questions focused on the health needs of the CAF, perceptions of the current program, and recommendations for future directions of the program. A thematic analysis was conducted with the interview data using an inductive approach.

Results: StF subject matter experts and staff identified CAF members' health needs, including the core areas of the program (injuries, physical activity, nutrition, social wellness, addictions), and some emerging needs (e.g., recovery from the pandemic) and high-risk groups in the CAF (e.g., lower ranks), as well as areas where more information may be needed to support health promotion (e.g., improved health surveillance data). They offered many recommendations to help move the program forward, including addressing administrative and

organizational challenges, and improving the overall approach to health promotion through strengthened partnerships with leaders and health promotion delivery staff at bases and wings, and the use of multi-pronged, targeted, and coordinated interventions based on improved data.

Conclusions: The current findings provided unique insights from health promotion experts. When combined with other lines of inquiry in the Situational Assessment, these findings may help to inform health promotion efforts moving forward to support the health and well-being of CAF members.

7D02: Understanding and improving Non-United Kingdom Service and transition in the British Armed Forces

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Introduction: Personnel recruited from overseas make an important contribution to national defence in many countries. However, the extent to which military institutions provide an inclusive work and social environment for foreign-born personnel is unclear. Previous research in the UK identified a stark gap in knowledge of Non-UK serving personnel, veterans and their families' experiences of life in the UK military and society. The UK recruits from 54 – predominantly Commonwealth – countries whose citizens are permitted to serve in the British Armed Forces, resulting in a highly diverse mix of personnel. This study aimed to expand our understanding of the Non-UK Armed Forces Community and their experiences of life in the UK, the military and beyond.

Methods: The research was co-designed with representatives of organisations who support the Non-UK Armed Forces Community in the British Armed Forces. Ethical approval was obtained via the author's institution and from the Ministry of Defence Research Ethics Committee. A qualitative approach using interviews and focus groups was taken. 108 participants from 26 countries were represented in this research. The majority of the sample were serving personnel (81), with 14 veterans and 13 family members. Representation from all three service branches (Army, Royal Navy, RAF) was achieved.

Results: Despite wide demographic variety across the sample in terms of their ethnicity, country of origin, service branch and length of residence in the UK, commonalities and shared experiences were identified across three themes: 1) visas and citizenship; 2) career barriers, and 3) culture and belonging.

Conclusions: The Non-UK Armed Forces Community were found to be experiencing unique challenges that UK serving personnel, veterans and their families do not need to contend with. These included visa and citizenship complexities and

costs, involuntary return migration on transition, a lack of access to healthcare for service-connected conditions amongst veterans in their countries of origin, and unique obstacles in their careers which arose due to their nationality. The recruitment, promotion and transition processes all came with higher stakes and increased risk for non-UK personnel and their families due to these being interconnected with their citizenship or right to reside in the UK. Overall, the service experience of Non-UK personnel is characterised by a degree of additional risk and precarity unique to their situation as foreign-born service members.

Poster Presentations

P131: Qualitative well-being follow-up of the individuals connected to the 2004 HMCS CHICOUTIMI fire

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Introduction: In October 2004, during her inaugural sail from the United Kingdom to Canada, 57 members of the Royal Canadian Navy (RCN) were on board HMCS CHICOUTIMI and saved their submarine from an electrical fire. Several immediate casualties resulted, including one death. Many of the Crew continued to live and work on the fire-damaged submarine for days until it was alongside in Scotland. An additional 42 Care and Custody Team (CCT) members served aboard the damaged submarine for weeks while it was in port. Little is known, however, about the long-term consequences of these events on the well-being of members and their families. To supplement the findings from previous studies that sought to quantify potential chemical exposure, medical conditions, and employment limitations, a qualitative study was requested to explore the breadth of long-term health and well-being experiences of those implicated in this naval disaster. We will present the coding templates developed for this study.

Methods: In-person, virtual, and phone interviews explored the experiences of three distinct populations: the Crew, their supporters (e.g., spouses), and the CCT. Together with the anticipated physical and psychological conditions in these populations, we coded the psychosocial indicators of well-being using framework analysis. Each interview was audio-recorded and transcribed where possible. Before releasing the final study results, participants will be given the option to review themes derived from their own interview.

Results: Interviews were conducted with 29 Crew members, 16 CCT members, and six spouses. First, we developed an initial template for coding using the seven domains of well-being identified by Veterans Affairs Canada: purpose, money, social integration, life skills, housing and physical environment, culture and social environment, and health. Second, emerging

themes from the data were grouped into meaningful categories, and hierarchical and lateral relationships between the themes were identified. The coding template was refined and modified through thorough testing of the completeness and clarity of the coding process. As a final step in template development, an auditor will review a subset of the coded interviews to validate a subset of themes coded within the template.

Conclusions: Interview transcripts were analyzed using template analysis to identify key themes in each subpopulation. These findings will emphasize well-being concerns to guide future responses to military disasters, offer recommendations on how to better assist CAF/RCN members and their supporters, and inform a subsequent survey to quantify health and well-being issues related to the events.

P133: Immune Function in Canadian Armed Forces Personnel Exposed to Repeated Low-intensity Blast Overpressure: A Mediation Analysis

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[1]*Defence Research and Development Canada*

Introduction: Occupational exposure to repeated blast overpressure (ReBOp) is common for many Canadian Armed Forces (CAF) personnel and may contribute to poor brain health outcomes later in life, possibly due to promotion of neurodegeneration. In addition, ReBOp may contribute to neuropsychological disorders, such as PTSD and major depressive disorder. Yet, we do not know the validity of these claims, to what extent blast exposure affects health, and how it may happen. From and immunological perspective, exposure to blast in acute and subacute phases likely invokes an inflammatory response to tissue damage/activation, while chronic process of neurodegeneration are mediated by dysregulated inflammatory signaling.

Methods: This cross-sectional cohort study compared cytokine profiles in male CAF members with extensive occupational exposure to ReBOp (n=87) and unexposed age-matched CAF controls (n=36). Blood samples were collected from resting volunteers into 4-ml heparin and 10-ml EDTA vacutainers. TruCulture® (TC) blood stimulation was used to activate innate and adaptive immune responses, respectively, using lipopolysaccharide (LPS) alone or in combination with Staphylococcal Enterotoxin-B (SEB). Concentrations (pg/mL) of eight inflammatory mediators [interleukins(IL)-1b,-1ra,-2,-4,-6,-8,-10,-12p70; tumor necrosis factor(TNF)-a] were quantified using Simple-Plex™ multianalyte cartridges on Ella®. Cognition and mental health status were assed by a battery of validated neuropsychological and neurocognitive tests. To go beyond associations in data, latent factor models and linear modelling

were used within a causal framework to attempt to estimate the effect of inflammation as a mediator between ReBOp and either neurocognition or mental health.

Results: CAF with ReBOp displayed lower scores on a latent variable of neurocognitive function with 86% posterior probability (pprob) compared to CAF controls, and scored worse on mental health measures with 95% pprob. CAF with ReBOp showed evidence of immunosuppression compared to controls: resting cytokine levels were lower with 99% pprob, innate immune function (response to LPS) was lower with 88% pprob, and adaptive immune function (response to SEB) was lower with 83% pprob. However, mediation analysis showed that decrements in neurocognitive and neuropsychological health in CAF with ReBOp were not due to inflammation, as the inflammatory and health differences were independent, and inflammation was not associated with any health measures.

Conclusions: CAF with ReBOp show evidence of suppression to both the innate and adaptive arms of the immune system. It is possible that this suppression is because of ReBOp, although it does not explain the neurocognitive and psychological decrements observed. Future studies should continue to probe these observed immunological decrements within a causal modelling framework that seeks to 1) understand direct effects of ReBOp on immune function, and 2) to understand whether these differences influence long-term brain health.

P145: Omega-3 Fatty Acid Status in Canadian Armed Forces Members - A preliminary assessment with recommendations for brain and mental health

Shiu, Maria, MSc[1]; Di Battista, Alex, PhD[1]; Vartanian, Oshin, PhD[1]; Tenn, Catherine, PhD[1]; Ann, Nakashima, PEng[1]; tim, Iam, MSc[1]; Caddy, Norleen, MSc[1]; Vallikanthan, Janani, MSc[1]; Lad, Maitri, BSc[1]; Rhind, Shawn, PhD[1]

[1]Defence Research and Development Canada

Brief Description: The importance of diet and nutrition in optimizing military readiness and performance is well established. Nutrients sustain health, protect against illness, and promote physical and cognitive resilience. Dietary Guidelines recommend increasing intake of omega-3 polyunsaturated fatty acids (*n*-3 PUFA) and reducing omega-6 (*n*-6 PUFA). The Omega-3 Index (O3I) is a blood-based marker used to assess *n*-3 PUFA status; as a measure of the sum of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) as percent total of erythrocyte fatty acids. The O3I national average is ~4.3%, which translates into a high-risk for developing cardiovascular disease and poor brain health. Values of 8–10% are believed to be optimal O3I. The Canadian Armed Forces (CAF) has recognized the potential health benefits from optimal dietary fatty acid composition; studies suggest a favorable *n*-3:*n*-6 PUFA status is associated

with reduced heart disease risk, improved immune function, enhanced mood and cognition, and lowered anxiety and suicidal thoughts.

Patient Population: The aim of this observational cohort study was to assess the O3I in a sample of all male CAF Operators with occupational exposure to blast (n=42) and unexposed age-matched CAF controls (n=39). A secondary aim was to identify if O3I levels are associated with physical and psychological health outcomes. EDTA blood samples were collected from each participant, and pipetted onto O3I Complete Test sample collection cards. A battery of validated neuropsychological and neurocognitive tests were completed by each participant. Factor analysis and linear modelling were used within a causal inference framework to arrive at adjustment sets to estimate the effect of O3I blood levels on latent constructs of neuropsychological and neurocognitive indices.

Results: The mean O3I was 4.6±1.1% (*n*=83) in all CAF participants. The O3I was an estimated 0.3% (90% CI= -0.1–0.7, 86% pprob) higher in CAF operators compared to CAF controls (4.7%vs.4.4%, respectively). O3I values were not associated with scores for cognitive performance, but were correlated with indices of mental health (PTSD, anxiety, depression). Causal modelling showed the effect of O3I levels is not estimable, however, as there is a potential unobserved measure of general health serving as a confounder between O3I and mental health indices that may be imposing a false relationship between the two.

Conclusions: Our results identified low *n*-3 PUFA status in CAF members and support the premise that enhancing dietary *n*-3 PUFAs intake may confer brain resiliency and promote mental health. Overall, these findings suggest a need for well-designed omega-3 supplementation trials in at risk populations.

P148: The Use of Buprenorphine for Treatment Resistant Depression: A Case Report

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Brief Description: Depression is a major cause of disability worldwide, yet a considerable proportion of individuals with major depressive disorder (MDD) still do not respond to treatment. Opioids are being investigated as one novel approach to treating depression. Evidence suggests that the endogenous opioid system plays a role in mood regulation and that dysregulation of the system can lead to depressive

symptoms. While not currently approved in the treatment of depression, interest has increased in the potential use of buprenorphine as a treatment for treatment resistant depression (TRD). We present an example of personalized medicine in a case of TRD that responded to treatment with buprenorphine with the added benefit of decreasing opioid use for pain.

Mr. O, 36-year-old man with a military background, was diagnosed with mild posttraumatic stress disorder (PTSD) and MDD. His PTSD was successfully treated with cognitive processing therapy, but his MDD proved refractory. Attempted treatments included therapeutic doses of several antidepressants and a full treatment regimen with rTMS, all of which yielded minimal response. Mr. O was also previously treated for his chronic barosinusitis with surgery followed by PRN hydromorphone, in which he noted mood improvements correlating with its occasional use. This led to the consideration of the use of the buprenorphine patch to treat his depression.

Patient Population: Veterans, active military.

Results: Mr. O started the 5 ug/hr patch which was well tolerated. He advanced to the 10 ug/hr patch, and then the 15 ug/hr patch. The daily dose ranged from 0.12-0.33 mg per day. Symptoms were monitored using the PHQ-9 and GAD-7.

Before treatment with buprenorphine Mr. O's PHQ-9 score was 16. Following seven weeks and eight months of treatment, his PHQ-9 score was then reduced to 4 and 5, respectively, displaying a sustained response.Notably, Mr. O reported minor mood improvements, but marked reductions in anhedonia. A further benefit was the cessation of the use of hydromorphone for pain.

Conclusions: These findings align with previous research implicating the role of the endogenous opioid system in mood regulation. This is an example of the possible utility of buprenorphine in the treatment of TRD, specifically when anhedonia is a prominent symptom. Further, the cessation of hydromorphone suggests this treatment could be of particular interest for populations with chronic pain and MDD comorbidity. This report highlights the use of personalized medicine in a military population.

VETERANS / VÉTÉRAN(E)S

HEALTH POLICY

Podium Presentations

2C02: Public Perceptions of the United Kingdom Armed Forces From the Past, Present, and Future, and the Impact on Military to Civilian Transition

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Brief Description: Over the past decade, a small number of United Kingdom (UK) studies have been conducted to understand the public's perceptions of the UK Armed Forces (AF). Understanding public perceptions of the AF is important due to the potential impact on AF recruitment, public support for defense policy and spending, and the important role public support plays in maintaining morale among the AF, especially during enduring deployments. Evidence indicates that how the public perceive veterans can impact transition into civilian life. Societal misconceptions regarding veterans may lead to economical disadvantages and implicit stereotyping can be harmful to veterans and their families. This presentation will provide an overview of the past decade of research into the UK public's perceptions of the AF, including the victim/hero paradox, and factors which may influence their perceptions. In addition, this presentation will provide insights from recent evidence of the UK public's perceptions, the potential legacy of past conflicts, and the changing climate of the UK AF during a period of relative down tempo, amidst the looming threat of war in Europe.

Patient Population: This presentation will focus on the UK AF community and the UK public in terms of UK public perceptions about the UK AF.

Results: Overall, the UK public hold positive views of the UK AF. During operations in Iraq and Afghanistan, a paradox was evident whereby despite disapproval of the UK's involvement, most were supportive of those serving. While there was support for 'the troops', research suggests a victimization narrative developed. That is many who opposed the Iraq and Afghanistan operations, reported perceiving those who served as victims of a political game who suffered from their experiences. While almost a decade has past, recent research indicates the public continue to hold inaccurate views such as veterans having mental health problems and the government not providing enough support. While the defense climate has changed, government support has increased, and only a minority of veterans report mental health difficulties, the public's perceptions continue to reflect inaccurate views, with potentially detrimental effects on veterans and their families.

Conclusions: With a potentially widening military to civilian gap, inaccurate perceptions and reduction in public support could negatively impact military to civilian transition, financial support for charitable support organizations, and political support for government spending on veterans. Continued understanding of the public's perceptions is needed, alongside consideration and action to dispel myths and create accurate depictions and perceptions of the UK AF community.

Poster Presentations

P179: Stakeholder Impressions on the Future of Digitally Delivered Mental Health Care

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[1]University of Alberta

Introduction: Following the initial outbreak of the COVID-19 pandemic, mental health clinicians rapidly shifted their service delivery from in-person to digital delivery (e.g., teletherapy, telemedicine, eHealth, and mobile health). This allowed clinicians to maintain continuity of care and meet increased mental health service demands. Today, many mental health services, including trauma-informed and trauma-specific care, continue to be offered via digital delivery.

Although instrumental in providing mental health care services, the long-term implications of delivering such services via digital mediums remains uncertain. It is clear that mental health services can be delivered digitally, however many questions pertaining to the accessibility and impacts of digital delivery on the quality of life of patients and providers have yet to be addressed.

Through this study, we aimed to identify current micro (i.e., clinician-patient interactions), meso (i.e., clinic interactions), and macro (i.e., government interactions) level issues surrounding the use of digitally delivered mental health services. By doing so, we aim to better understand how these services could be optimized to improve treatment outcomes.

Methods: This ongoing qualitative study examines stakeholder opinions on micro, meso, and macro level issues surrounding the use of digitally delivered mental health services. We will analyze data from online semi-structured interviews using rapid thematic analysis. Stakeholders (N=27), including, but not limited to, clinicians, policy makers, and researchers from Canada and abroad, have been interviewed for this study.

Results: Preliminary analysis indicates that most stakeholders hold positive opinions on the current use of

digitally delivered mental health services. Most stakeholders believe that such services will play an integral role in mental health care moving forward. Certain issues, including budgetary concerns, technological issues, and uncertainty surrounding policies and regulations, must be addressed.

Conclusions: Many stakeholders agree that digital mental health services will continue post-COVID. Study findings may assist stakeholders in identifying the unique benefits of delivering mental health care via digital means and how to address issues related to this modality.

HEALTH SERVICES

Podium Presentations

1C04: Canadian Veterans' experiences of living with chronic pain and access to services

Ul Haq, Moizza Zia, MPH[1]; Ashoorion, Vahid, PhD[1]; Xi, Cheng'En, BHSc[1]; Ross, Natasha, MSc[1]; Wang, Eileen, BHSc(Student)[1]; Parakh, Nandana, BHSc[1]; **Busse, Jason, PhD**[1,2]; Darzi, Andrea, MD, PhD[1]; Alvarez, Elizabeth, MD, PhD[1,3]

[1]McMaster University; [2]Chronic Pain Centre of Excellence for Canadian Veterans; [3]Centre for Health Economics and Policy Analysis

Introduction: Forty-one percent of Veterans live with chronic pain, compared to 20% of Canadians in the general population. This study explores experiences of Veterans living with chronic pain (VLwCP), including how pain impacts seven domains of well-being (health, employment or other meaningful activity, finances, social integration, life skills, housing and physical environment, and cultural and social environment) and perceived barriers and facilitators to chronic pain care to understand how health and social services can better meet the needs of Canadian Veterans.

Methods: We conducted a descriptive qualitative study using semi-structured in-depth interviews with Canadian Veterans living with chronic pain. We used intensity and snowball sampling to identify and recruit Veterans of the Canadian Armed Forces and Royal Canadian Mounted Police living with pain for 3 months or longer. Using a deductive/inductive approach, we developed concepts and themes that represent the experiences of Veterans living with chronic pain and barriers and facilitators to accessing physical, psychological, pharmacological or related services for chronic pain.

Results: We interviewed 35 Canadian VLwCP who reported that pain affected their lives in many ways, including negatively impacting relationships and quality of life, preventing them from doing activities of daily living and leisure activities or hobbies. Participants used a variety of physical or mental health programs, supports, or services to manage their chronic pain. Several factors were identified as

barriers and/or facilitators to accessing chronic pain services, such as access to a family doctor, availability of nearby services, and difficulty asking for help or support for their chronic pain. Barriers or facilitators to obtaining coverage from Veterans Affairs Canada (VAC) included case managers, knowing what services and benefits were covered by VAC, the process for submitting claims, and outside supports. The domains of well-being had bidirectional effects on chronic pain. For example, for some, being social can help pain, distract from pain, or improve mental health, but unmanaged pain can limit the ability to socialize.

Conclusions: Participants highlighted the impact of chronic pain on multiple domains of well-being and some reported access to services was a barrier to appropriate care. A survey of Canadian Veterans would be helpful to establish the generalizability of themes we discovered, and identify important targets for optimizing quality of life for VLwCP.

2B04: Female veteran identity in the United Kingdom and its impact on accessing support services.

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[1]Anglia Ruskin University; [2]Loughborough University

Introduction: Women have always been a minority in the United Kingdom (UK) veteran population (currently 13.6%). As a result of women's minority status, policy and services for veterans have been built around the needs of men. As such, policy makers and service providers need a better understanding of female veterans' needs and experiences to ensure their policies and services are inclusive to all.

As part of a wider qualitative study of female veterans' experience of government and charity service provision in the UK, we explored female veterans' identity perceptions, including self-perception, how they felt they were viewed by others and the impact of this in relation to support service access.

Methods: Utilising an exploratory-descriptive qualitative approach, we carried out eighty-five (85) semi-structured interviews with female veterans across the UK. Participants were representative of each of the military service branches; Royal Navy, Royal Air Force and British Army, ranged in age between 29 and 80 and had left military service between 1970 and 2022.

As a part of the interview, participants were asked how they aligned with the term veteran, how they perceived others viewed them and any impact of this on their access to support services. Thematic analysis was undertaken to determine key issues, ideas and impacts that emerged through discussion.

Results: Whilst participants spoke about being proud to have served, many had mixed feelings about identifying with the term 'veteran' and this acted as a barrier to them accessing support services.

Some participants understood they met the definition of military veteran, but this identity was not first and foremost; they primarily identified as a mother, or partner. Others had negative experiences whilst serving and so were reluctant to be associated with the military in any way post service.

Factors participants described as being representative of 'veteran', were, being older, male and serving in frontline roles. Participants felt these stereotypes which were also held by the wider UK public and male veterans, were exacerbated by both media portrayal and the branding used in services for veterans.

Conclusions: The study findings raise awareness of how women who have served in the UK Armed Forces feel about aligning with the term 'veteran' and highlights potential implications for the use of this terminology and for the wider acknowledgment of women as veterans, for those commissioning, or providing support services, the UK government and the wider public.

2C04: Creating and evaluating military-centric service navigation networks for collective impact

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Program/Intervention Description: Military-connected populations consistently report challenges navigating benefits and services, and frequently experience multiple, interrelated needs that span domains (e.g., employment, housing, legal). Collaboration between clinical and social service providers is necessary to meet such varied needs. Yet, the health and human services landscape is fragmented and often lacks transparency and accountability. To address this problem, the D'Aniello Institute for Veterans and Military Families at Syracuse University (IVMF) developed AmericaServes (AS), an adapted collective impact model for creating and evaluating coordinated networks of organizations that address health and human service needs of the military-connected population. Analogous to health care coordination models, AS strengthens cross-sector collaboration by implementing a referral-based system, managed by a coordination center of human navigators utilizing a shared technology platform.

Evaluation Methods: In the AS model, prior to launch, stakeholders across sectors are brought together through a series of planning sessions. A coordination center is selected through competitive application process. Network member organizations receive training in the platform and adopt a common initial process to screen clients for social determinants of health and obtain consent to make referrals for needs beyond any single organization's capacity or expertise. Because the AS intervention model is focused on the system, network health outcomes are defined as process outcomes in accordance with systems theory: timeliness, appropriateness, and scalability. These outcomes are assessed using data from the technology platform.

Results: To date, AS networks have been established in 18 regions and collectively include over 1,000 organizations. They have assisted over 43,000 clients with 106,000 requests. Examining data across networks in 2019 (prior to COVID-19), we find: 1) individuals matched to a provider within 1.07 days (median); 2) coordination centers accurately selected a provider on the first attempt for 94% of requests; and 3) networks operational in 2018 and 2019 managed 20% more requests in 2019.

Conclusions: Our evaluation shows that AS is an effective model of care coordination for military-connected clients as measured by indicators of timeliness, appropriateness, and scalability. Other ongoing projects explore the impact of service complexity on network performance; creating a dataset to enable comparisons between similar models of care across technology platforms; and strategies networks used to persist through COVID-19.

Long-term study through continued partnership with the VA will focus on secondary outcomes, or whether more timely and appropriate service delivery resulted in better care and improved well-being for the military-connected population.

2C05: Challenges and benefits of achieving strong participation of United States Veterans Affairs Medical Centers in cross-sector collaboratives to support Veterans

Hausmann, Leslie, PhD[1, 2]

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Introduction: The AmericaServes program uses an adapted collective impact model to build and sustain regional coordinated networks of public and private organizations working towards the shared agenda of supporting the United States (US) military and Veteran community. To fully address the health and social needs of veterans, it is important to engage Veteran Affairs Medical Centers (VAMCs), major providers of Veteran healthcare, as Network members. However, the extent to which VAMCs participate in regional AmericaServes Networks is unknown, as are the potential benefits such participation provides to Veterans.

Methods: We conducted a convergent parallel mixed-methods study to understand the participation of VAMCs across AmericaServes Networks. We interviewed 17 staff from 7 AmericaServes Network coordination centers and 14 staff from affiliated VAMCs. Using Himmelman's Developmental Continuum of Change Strategies as a guiding framework, we used rapid qualitative analysis to classify participation VAMCs in AmericaServes Networks into one of four levels reflecting increasing levels of intensity and complexity: networking, coordinating, cooperating, or collaborating. We also identified barriers to and facilitators of more advanced participation. Finally, using 2019 AmericaServes client data, we compared referral resolution rates of Veterans who were dually served by both organizations (N=4,296) or only by AmericaServes (N=1,974), stratified by level of VAMC participation in the AmericaServes Network.

Results: Across seven AmericaServes Networks, VAMC participation was classified as networking (lowest level) in three, coordinating in two, cooperating in one, and collaborating in one. Barriers to collaborating included working with a large bureaucracy, gaining buy-in from VA leadership, and not having VAMC staff adopt the referral platform. Facilitators to collaboration were ongoing communication, shared commitment to serving Veterans, and having designated points-of-contact between organizations. Referral resolution rates were lowest (65.29%) in AmericaServes Networks in which VAMCs were classified as networking and highest in Networks in which VAMCs were cooperating (85.62%) and collaborating (83.09%). In Networks with coordinating, cooperating, and collaborating VAMCs, resolutions rates were higher for dually served Veterans than for Veterans served only by AmericaServes.

Conclusions: Although there is wide variation in levels of participation of VAMCs in AmericaServes Networks, there are effective strategies to overcome the most common barriers to full collaboration. Ultimately, Veterans served by AmericaServes Networks with stronger participation of VAMCs benefit in the form of higher referral resolution rates. Barriers and facilitators to collaboration identified in this study will guide future efforts to foster strong participation of VAMCs in cross-sector collaboratives such as AmericaServes.

7B02: Military cultural competence among civilian healthcare providers: A systematic review

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[1]McMaster University; [2]Queen's University

Introduction: Canadian Armed Forces (CAF) Veterans come from a unique military culture and experience chronic pain at a higher rate than the Canadian general population. After release from the military, Veterans access health services through civilian providers in provincial public health systems who may be unfamiliar with military service and any associated cultural and health needs. The purpose of our research is to: 1. synthesize evidence on civilian healthcare providers; military knowledge, cultural competence, and gaps in knowledge; and 2. synthesize evidence on knowledge translation approaches aimed at improving military knowledge and cultural competence among civilian healthcare providers.

Methods: A mixed methods systematic review using Johanna Briggs Institute methodology has been conducted. Primary research (trials, observational, cohort, cross-sectional, and qualitative studies) and grey literature (unpublished governmental or other non-academic institutional reports) that evaluate the knowledge needs of civilian healthcare providers and/or knowledge translation/educational approaches for improving military knowledge among healthcare providers were included. A health sciences librarian was consulted in the design of the search strategy, which was implemented in multiple healthcare databases (e.g., Medline, EmBase, CINAHL) and grey literature sources (e.g., government websites) to identify eligible articles. Reference lists of eligible articles were also screened. Four reviewers screened titles and abstracts and selected articles for full text review. A narrative description of key findings will be reported.

Results: We identified a total of 5347 references, 20 of which met inclusion/exclusion criteria and were included in data extraction, analysis, and synthesis, which is ongoing. Most articles were American and all were published in the last 10 years. So far, the literature reveals a lack of military cultural competence among civilan healthcare providers and, despite calls for education, limited means for developing cultural competence. However, there does seem to be an increase in volume and frequency of papers being published on this topic, which is promising. We will provide recommendations, based on our findings, around how civilian clinicians can provide effective care for Veterans.

Conclusions: Our findings will synthesize the evidence on civilian healthcare providers' military and Veteran knowledge, cultural competency. The results will contribute to the development of guidelines for civilian healthcare providers working with Veterans who have chronic pain and identify areas for future research and health professional education to help prepare civilian healthcare professionals to meet the unique needs of Veterans with chronic pain.

Poster Presentations

P159: Strategies for Implementing Measurement Based Care in the National Network of Operational Stress Injury Clinics

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Program/Intervention Description: Research over the past 30 years has demonstrated that measurement based care improves client outcomes and reduces treatment drop out. In its mission to improve the mental health of Veterans, Veterans Affairs Canada (VAC) launched the Client Reported Outcome Monitoring Information System (CROMIS) initiative in the National Network of Operational Stress Injury (OSI) Clinics. CROMIS facilitates session by session administration of the OQ-45.2, the gold standard in outcomes monitoring. It also generates reports to facilitate the review of progress which allows for treatment to be adjusted based on client feedback and needs. The initial phases of CROMIS implementation in 2012-2013 consisted of training sessions for staff and resulted in an inconsistent level of uptake. A new phase of implementation (CROMIS 2.0) was launched in August 2021. Multiple strategies were utilized such as: support from experts in the field, involvement of management, selection of over 40 CROMIS champions to support the initiative in each OSI clinic, scientific literature reviews, technical trainings, group consultation sessions including case discussions, experiential learning (role plays), and professional group discussions.

Evaluation Methods: Using CROMIS aggregate data from the past four years, the total number of administrations of OQ-45.2 as well as the proportion of clients completing the OQ-45.2 in CROMIS per year is calculated and compared. A survey of OSI Clinic staff (including Champions) on CROMIS 2.0 implementation examines the strategies that have the biggest impact on engagement towards measurement based care using the OQ-45.2.

Results: A preliminary comparison of the total number of administrations of OQ-45.2 as well as the proportion of clients completing the OQ-45.2 in CROMIS per year suggests increased use of measurement based care. Based on preliminary feedback received from champions, this increase seem to be associated with a training format that allows OSI Clinic staff to gain a deeper understanding of the therapeutic value of measurement based care.

Conclusions: This is positive news for Veterans as providing opportunities to participate in measurement based care can lead to improvements in their symptomatology and functioning. Strategies utilized in CROMIS 2.0 appear to be promising elements to consider in the implementation of measurement based care.

P173: Mental health services use within the first five years following release from the Canadian Armed Forces: methodological considerations for comparisons with the general population

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Introduction: Previous research comparing the mental health (MH) outcomes and services use of military Veterans and members of the general population often assumes stable rates of MH service use over time. Further, much of the existing research related to MH services use relies on standardization or restriction to adjust for key differences in the sociodemographic characteristics of Veteran and civilian populations, including age and sex-based differences. This study aimed to explore the stability of MH services use in the first five years following release from the Canadian Armed Forces (CAF), and to demonstrate the impact of using increasingly stringent matching criteria on effect estimates when comparing Veterans to civilians, using incident outpatient MH encounters as an example.

Methods: We used administrative healthcare data from Veterans and civilians residing in Ontario, Canada to create three hard-matched civilian cohorts: 1) age and sex; 2) age, sex, and region of residence; and 3) age, sex, region of residence, and median neighbourhood income quintile, while excluding civilians with a history of a long-term care or rehabilitation stay, or the receipt of disability/income support payments. We estimated the proportion of Veterans who had an outpatient MH visit within the first five years of release from the Forces, and used extended Cox models to estimate time-dependent hazard ratios (HRs).

Results: Across all matched cohorts, time-dependent analyses suggested that Veterans had a statistically and significantly higher hazard of an outpatient MH encounter within the first three years of follow up than civilians (adjusted HRs ranging from 1.09-1.22), but differences were attenuated in years four to five (adjusted HRs ranging from 1.02-1.04) and were no longer statistically significant. As anticipated, more stringent matching decreased baseline differences among unmatched variables, such as number of major and minor comorbidities, and shifted the effect estimates. Sex-stratified analyses revealed stronger effects among females compared to males.

Conclusions: Using an outpatient MH encounter as an example, this study demonstrates the implications of several study design decisions, including matching and analytic approaches, that should be considered when conducting comparative Veteran and civilian health research.

P177: What do civilian healthcare providers need to know to care for Veterans with chronic pain? A qualitative study

Williams, Ashley, PhD[1]*;* Nazari, Goris, PhD[2]; Miller, Jordan, PhD[2]; Tam-Seto, Linna, PhD[1]; Cramm, Heidi, PhD[2]; Wolfrom, Brent, MD[2]; McKinnon, Margaret, PhD[1]

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Introduction: Canadian Armed Forces (CAF) Veterans come from a military culture and experience chronic pain at a higher rate than the Canadian general population. After retiring from the military, Veterans access health services through civilian providers in public health systems who may be unfamiliar with their cultural and health needs. Our objective is to determine what civilian healthcare providers should know about the unique health needs of Veterans living with chronic pain to improve civilian health services.

Methods: An interpretive description approach was used to produce results that can be applied to practice. To obtain perspectives from a variety of stakeholders, we are conducting individual interviews with a proposive sample of 25-35 participants including Veterans living with chronic pain, civilian healthcare providers in various disciplines working with Veterans living with chronic pain, and health policy and management personnel. Interviews will transcribed and analysed using Braun and Clark's (2006) thematic analysis procedure.

Results: Data collection and analysis is ongoing and, thus far, we have identified 2 preliminary themes: 1. Provider understanding of the military and how service might impact health is essential; 2. The importance of treating the Veteran as a whole person. Making an effort to understand a Veterans' military experience (e.g., asking thoughtful and respectful questions, learning about rank structure) can help clinicians build therapeutic relationships and obtain important clinical information while also helping Veterans feel safe and understood. Clinicians also noted that many of their Veteran clients have complex health profiles while Veterans pointed out the inherent connection between their chronic pain and their mental health. Ultimately, this complexity points to the need for clinicians to attend to the Veteran as a whole person, not just a collection of health issues. Interestingly, concerns were expressed by veterans about civilian clinicians' capacity to live up to expectations given the current climate of healthcare in Canada.

Conclusions: Military cultural competence is an essential skill for civilian healthcare providers who work with Veterans living with chronic pain. The results of this study will contribute to the development of guidelines for civilian healthcare providers working with Veterans with chronic pain.

PRIMARILY MENTAL HEALTH AND WELL-BEING

Podium Presentations

1C01: Considerations for Ketamine in the Effective Management of Chronic Pain and Mental Health for Veterans: A systematic review and meta-analysis

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Introduction: Ketamine has emerged as a promising treatment alternative for the management of chronic pain. Despite encouraging findings in civilian populations and favorable results from trials examining its efficacy in military populations, there is still a dearth of information pointing to optimal specifications related to ketamine administration for both pain and mental health conditions.

To address this gap, we sought to conduct a systematic review and meta-analysis synthesizing evidence on the effectiveness, tolerability, and feasibility of ketamine in the management of chronic pain and mental health conditions in Veterans.

Methods: The pre-registered review was conducted following PRISMA and Cochrane guidelines. Literature search was conducted using Pubmed/Medline, PsycINFO, EMBASE, Web of Science, and CINAHL. A total of 1020 studies were reviewed, and 11 studies were retained for data analyses. From each study, the following information was extracted: study characteristics (e.g., age, gender), study data (e.g., sample size, pre- and post-outcome mean and standard deviations), and potential moderator/study rigour information (e.g., population targeted, study design).

Results: Across samples, improvements in mental health and pain were evident, with the use of ketamine leading to significant reductions. These effect sizes were robust with moderate-to-large effects. In addition, the reductions in symptoms were observed in both active-duty and Veteran groups, and for different routes of ketamine administration, frequencies of ketamine administration, duration of ketamine treatments, dosage, study design, allowance for concurrent treatments.

Conclusions: Taken together, evaluated evidence suggests ketamine may be a promising treatment for mental health and chronic pain in military populations.

1C03: Investigating sex-based differences in chronic pain and mental health comorbidities in treatment seeking Canadian Armed Forces Veterans

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Introduction: Military personnel and Veterans are at elevated risk for chronic pain that often co-occurs alongside mental health conditions, such as posttraumatic stress disorder (PTSD), depressive disorders, and substance abuse disorders. Knowledge of the nature of this comorbidity is limited, particularly its linkage to specific symptom clusters, severity, and the potential moderating influence of sex. As such, this work aimed to address these knowledge gaps using a large treatment-seeking sample of Canadian Armed Forces (CAF) Veterans.

Methods: Participants included 711 (241 female) CAF members and Veterans seeking treatment for operational stress injuries. As part of standard clinical intake procedures, all participants completed self-report measures of pain, substance abuse (DAST-10), PTSD symptom severity (PCL-5), and depression symptom severity (PHQ-9). PCL-5 scores were also broken down into DSM-5 PTSD symptom clusters (i.e., avoidance, hyperarousal, intrusion, and negative attitude). Pain was assessed using the Short Form 36 Bodily Pain Subscale (SF-36-BP) and the Brief Pain Inventory Short Form (BPI-SF), capturing pain severity and pain interference. Multivariable linear regressions were used to identify pain-related variables associated with mental health outcomes (e.g., PTSD symptom severity) while controlling for sociodemographic factors and considering sex-based interactions for all variables. Additionally, linear regressions using the same set of covariates were used to identify associations between mental health variables and pain (e.g., SF-36-BP). Sex-stratified models were also estimated.

Results: Across models, pain severity (as measured by the BPI-SF) was significantly associated with all PTSD symptom clusters and mental health comorbidities. This did not change by sex. Notably, DAST-10 and BPI-SF symptom severity were significantly associated with all PTSD symptom clusters among males, but not females in the sex-stratified models. A significant interaction was observed between sex and marital status when predicting pain; this phenomenon appears to be exclusive to males.

Conclusions: This work aimed to explore nuances in the relation between chronic pain and mental health comorbidities, and the moderating impact of sex. A significant portion of CAF Veterans demonstrated comorbid pain symptoms which largely did not differ by sex. However, substance use was a significant predictor of all PTSD symptom clusters and pain severity among males, but not females, suggesting sex-based differences in potential self medication for comorbid PTSD and pain severity. Overall, these findings suggest a highly comorbid association between mental health conditions and pain, and highlight potential sex-based differences in the role of support structures and coping mechanisms among mental health treatment-seeking CAF members and Veterans.

2B03: Exploring the experiences of LGBTQ2S+ defence members who have served in the Canadian Armed Forces

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Introduction: Very little is known about the experiences of LGBTQ2S+ individuals in the Canadian armed forces. The aims of the present, exploratory, study are to identify areas of practice, policy, recruitment, and retention that could be improved or further developed to support the needs of 2SLGBTQIA+ service members during their time with the Canadian Armed Forces, and also during their transition from military to civilian status. We also hope to identify existing gaps in cultural competencies necessary to support the health and well-being of LGBTQ2S+ individuals in the armed forces.

Methods: This is a qualitative study grounded in social constructivism, using storytelling as a method of data collection. Participants who identified as members of the LGBTQ2S+ community and Canadian Armed Forces Veterans reached out to us to participate. Qualitative interviews were conducted over Zoom using a critical incident storytelling approach. Interviews were semi-structured and followed an interview guide. Qualitative content analysis using a Framework Analysis approach was implemented using a thematic framework. Analysis involved inductive, interpretive, phenomenology-facilitated analysis using MAXQDA data analysis software. Participants were encouraged to share positive, negative, and neutral experiences as long as they felt they were relevant.

Results: 9 qualitative interviews have been completed. Preliminary analysis has revealed emerging themes around a need for inclusion and a lingering distrust of the Canadian Armed Forces as an institution as a result of historical anti-gay policies and attitudes, and the LGBT Purge in Canada.

Many participants felt that their identity as a member of the LGBTQ2S+ community affected their experience in the CAF, often in a negative way. However, participants also expressed strong positive feelings and hope about the future of the CAF as an institution, and pride in their service.

Conclusions: Participants in this study expressed both positive and negative experiences about their time serving in the CAF. Based on preliminary analysis, the interviews should provide insight into what the CAF has done well in the past and how they can strengthen their practices going forward, such as: what the CAF has ultimately failed at that they can improve looking to the future; how CAF might specifically support their LGBTQ2S+ members, and begin to reckon with a problematic history that may deter new membership; and opportunities for research and policy change to inform an inclusive CAF going forward.

2B05: How do we measure housing in Veterans? Results of a review to identify and characterize available instruments

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Introduction: Veterans Affairs Canada's (VAC) well-being framework comprises seven domains, including Housing and Physical Environment. This particular domain includes "the built environment (e.g., housing) as well as the natural environment (e.g., water & air quality)," with the desired outcome of "safe, adequate, and affordable housing" (Pound, 2019). While VAC currently measures this domain using a single indicator – the percentage of Veterans among Canadian homeless – Housing and Physical Environment is much broader and spans characteristics beyond just homelessness. Measures of Housing and Physical Environment implemented across the literature are quite varied (Rautio et al., 2018), and there is no consensus on a standard measurement tool. This presentation will share the results of a review to identify and characterize instruments that measure this domain, report on their psychometric properties, and identify which provide the best reliability, validity, and usefulness for Veterans and their Families.

Methods: A search strategy was developed and applied to relevant health, psychological, medical, and sociological databases (e.g., CINAHL, Web of Science, Embase, PsychInfo) as well as psychological measurement databases (HaPI, PsychTools). Results include primary research studies published before June 2022 that report on the development of an instrument(s) to measure housing and/or physical environment, examine the psychometric properties of an instrument(s), or use an instrument(s) in an empirical

investigation. Data will be extracted to characterize the features, psychometric properties, factor analytics, and risk of bias for relevant instruments.

Results: Of the 6656 titles/abstracts screened, 1529 were assessed as eligible for full-text screening, which is nearly complete. Data extraction and final results are expected by September 2023. Early impressions suggest the availability of instruments to measure aspects of housing and physical environment that are relevant to well-being, such as objective and subjective measures of amenities, air and water pollution, security (e.g., access, building condition), attributes (e.g., utilities), quality and aesthetics (e.g., overall design) and others. The complete results will be potentially useful to researchers and policymakers for measuring housing-related well-being in and of itself and to support effective policies and programs.

Conclusions: This review will summarize the tools currently available to measure housing and physical environment, their psychometric properties, and their application across different populations, including Veterans. It will also address the validity of these tools in relation to VAC's definition of "Housing and Physical Environment" as a domain of well-being and their usefulness for research in the Veteran population.

3A01: Impact of Sexual Misconduct on Canadian Women-Identifying Military Members and Veterans

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[1]*McMaster University;* [2]*St. Joseph's Healthcare Hamilton;* [3]*Homewood Research Institute*

Introduction: The mental and physical health impacts of military sexual misconduct (MSM) on women in the military include post-traumatic stress disorder, difficulties with emotion regulation, chronic pain, and heightened risk of hypertension. The majority of this research has been conducted through quantitative surveys of non-Canadian samples. The aim of the current study was to better understand Canadian women's experiences of MSM during their CAF service using qualitative methods.

Methods: The project team conducted qualitative interviews with 19 woman-identifying CAF Veterans. A social constructivist perspective was used to inform the development of the interview guide, which centered on how MSM influenced daily functioning, relationships, identity, and military culture (e.g., response of leadership, access to supports). Participants also completed psychometric scales to gauge mental health including depression, anxiety, stress, moral injury, and resilience. Interviews were conducted via Zoom video conferencing platform by an experienced,

trauma-informed qualitative interviewer. Interviews were audio recorded and transcribed. All transcripts were de-identified and analyzed using the software program MAXQDA.

Results: Approximately half of participants had served in the army branch and 63% had served for 11 or more years. The majority (89%) had received care for their mental health in their lifetime, primarily for post-traumatic stress disorder (85%). The main themes discussed by participants in interviews included: 1) impacts of MSM on mental and emotional health (e.g., trauma, anxiety, depression, agoraphobia, substance use, anger) and the stigma associated with these mental and emotional health impacts; 2) changes in physical health as a consequences of experiencing MSM; 3) coping strategies implemented to deal with incidents of MSM, including changes in gender presentation and/or sexual behaviours to hide or protect themselves after experiencing MSM, seeking protective relationships with others, trying to blend in or mask their feelings to avoid unwanted attention, and asserting themselves to leaders to effect change or take back their power; 4) reduced occupational performance brought on by mental health impacts or retaliation/poor treatment from chain of command and/or co-workers; and 5) changes to social functioning, such as relationships with family, and the loss of trust and safety resulting in social anxiety, hypervigilance and increased isolation. Participants also provided insight surrounding gaps in MSM-specific resources, services, and supports.

Conclusions: These findings highlight how MSM touches on every aspect of a woman's life during her time in the CAF, including their daily functioning, mental and physical health, social functioning, and relationships.

3C04: Feasibility and Effectiveness of Massed Prolonged Exposure Therapy to Treat Military/Veteran Posttraumatic Stress Disorder

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Program/Intervention Description: Posttraumatic Stress Disorder (PTSD) is a complex diagnosis that is associated with significant distress and long-term impairment. It is imperative to innovate effective and accessible treatments. Prolonged Exposure Therapy (PE) is a trauma-focused therapy that has been validated for military/Veteran populations. Standard PE (SPE) involves 12-15 weekly therapy sessions. In spite of its established efficacy, SPE is associated with high drop-out rates, and poses practical and clinical barriers. Massed PE (MPE) involves daily sessions, typically offered over a two-week period. It is vital to evaluate the efficacy of MPE in a treatment-seeking Canadian military/Veteran population, and to further establish its effectiveness in real-life clinical settings. This

would be the first feasibility study of MPE in Canada.

Evaluation Methods: This study will examine the feasibility and effectiveness of MPE in a sample of five to ten treatment-seeking Veterans who have been diagnosed with PTSD and agree to participate in trauma-focused therapy. Baseline demographic, structured clinical interview and self-report questionnaire data will be compared with interview and questionnaire data collected at twelve week follow-up. The primary outcome measure will be change in PTSD symptom severity on a structured clinical interview. Treatment outcome measures will be collected once per week during treatment. Qualitative treatment satisfaction survey and MPE receptivity qualitative survey will also be administered at the end of treatment.

Results: This study will provide real-world evidence of the clinical utility of MPE. Based on previous research in the United States and Australia, it is expected that MPE will result in reduced PTSD symptom severity, improved functioning and quality of life as measured at the end of treatment and at 12 week follow up. It is also anticipated that patients will endorse the tolerability of MPE in spite of short-term discomfort associated with the intense format. It is hypothesized that MPE may address distraction, avoidance and decreased motivation that can occur between weekly sessions, and may increase commitment to and integration of the treatment via daily participation.

Conclusions: It is expected that this pilot and feasibility study will demonstrate the effectiveness and tolerability of MPE in a sample of treatment-seeking Veterans. This will facilitate access to a more efficient version of a gold-standard treatment for PTSD, and directly impact the wellbeing and functioning of Veterans and their families. This study will also inform the implementation of a single-blinded non-inferiority randomized control trial comparing MPE and SPE in a larger sample of treatment-seeking Veterans.

3C05: Pharmacotherapy for military-related posttraumatic stress disorder - beyond first-line treatment to a focus on symptom management

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Brief Description: The lifetime prevalence of military-related posttraumatic stress disorder (PTSD) is between 7.2 and 20%, a figure that is significantly higher than civilian populations. Yet, research evaluating treatment outcomes has found military-related PTSD to demonstrate differential and sometimes poorer outcomes compared to civilian-related PTSD. While

treatments for PTSD vary depending on contextual factors, phase-oriented approaches that include behavioural stabilization, psychoeducation, anxiety management, trauma-focused psychotherapy, relapse prevention, and aftercare have generally been well-accepted by both patients and care providers. Within this approach, both psychotherapy and pharmacotherapies are used. However, despite the acceptance of this approach and other guides to treatments, the complex nature of military-related PTSD and poorer response to treatment can make their utilization difficult. In this presentation, we provide an overview of the pharmacotherapeutic management of military-related PTSD beyond first-line use and discuss the considerations for pharmacotherapies throughout different phases of treatment and recovery.

Patient Population: This presentation focuses on military-related PTSD in active-duty and Veteran populations.

Results: The presentation will overview existing and emerging research from various sources on the use of pharmacotherapies in the treatment of PTSD.

Conclusions: In this presentation, we will review the use of pharmacotherapies during various phases and contexts of the treatment and recovery process. These include diagnosis and psychoeducation, trauma-focused psychotherapy, pharmacological management, treatment-resistant PTSD, the combination of psychotherapy and pharmacotherapy, alternative and emerging therapies, and treatment adherence and dosing.

3C06: Comparison of psychotherapies, pharmacotherapies, and combination therapies for posttraumatic stress disorder in military populations: A meta-analysis

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[1]*MacDonald Franklin OSI Research Centre*

Introduction: Data estimate that up to 1 in 5 Veterans are diagnosed with posttraumatic stress disorder (PTSD) in their lifetime. Given the high rates of PTSD in military and Veteran populations, the provision of care with consideration for the characteristics of the population and treatments are of critical importance. This presentation will overview overall findings from a meta-analysis that evaluates the relative effectiveness of psychotherapies, pharmacotherapies, and combination therapies for PTSD in military and Veteran populations.

Methods: The pre-registered review is conducted in accordance with PRISMA and Cochrane guidelines. A search was conducted using PsycInfo, Medline, Embase, CINAHL, and ProQuest Dissertations and Theses. After the removal of duplicates, a total of 12002 studies were screened for inclusion. The final sample includes clinician-administered data on symptoms of PTSD change in response to treatment from 172 studies.

Results: Meta-analytic findings indicate significant heterogeneities in the literature and found that the pooled estimate of effects for psychotherapies and pharmacotherapies were comparable overall (g of 1.06 – 1.12, CI (0.95, 1.28), p <.001). However, the combination of psychotherapy with pharmacotherapy was significantly higher (g = 2.48, CI (1.68, 3.29), p < .001).

Conclusions: Our findings indicate that combining psychotherapy and pharmacotherapy contributed to significantly larger effects compared to psychotherapy or pharmacotherapy alone. Our findings are further strengthened by the number of studies included, and corroborated by similar findings via self-reports. The novelty of these results holds strong implications for future directions in treatment development and practice recommendations.

3D01: A Tale of Two Targets: Differential Effects of Posterior Cingulate Cortex- and Amygdala-targeted Neurofeedback on Posttraumatic stress disorder related Neural Activation

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Introduction: Real-time fMRI-based neurofeedback (rt-fMRI-NFB) is an emerging non-invasive technology that enables individuals to learn how to self-regulate brain function associated with neuropsychiatric symptoms, including post-traumatic stress disorder (PTSD). In clinical studies, selecting the specific brain region for neurofeedback-mediated regulation is primarily informed by the neurobiological characteristics of the participant population and desired clinical outcomes. Extensive research has demonstrated a strong link between PTSD symptoms and multiple functional disruptions in the brain, including hyperactivity within both the amygdala and posterior cingulate cortex (PCC). As such, several previous rt-fMRI-NFB studies have explored training individuals with PTSD to downregulate activity within each of these brain regions. However, the differential effect of neurofeedback target selection on clinical outcomes and PTSD-related neural activation has not previously been investigated.

Methods: In the present analysis, we compared the whole-brain activation of individuals with PTSD between two rt-fMRI-NFB studies targeting downregulation of either the amygdala ($n = 14$) or the PCC ($n = 14$). Additionally, we assessed the change in PTSD symptoms over the course of neurofeedback training between participants in each of these two studies.

Results: For participants receiving PCC-targeted neurofeedback, as compared to amygdala-targeted neurofeedback, we observed decreases in neural activity across the brain including in several regions that are critically implicated in PTSD psychopathology - namely, the bilateral cuneus/calcarine cortex, the left superior parietal lobule/angular gyrus, the left occipital pole, and the right superior temporal gyrus – during neurofeedback-mediated regulation. Conversely, for participants receiving amygdala-targeted neurofeedback, as compared to PCC-targeted neurofeedback, we did not observe any differential whole-brain activity between the groups. As a critical control, participants did not differ in their ability to downregulate the target brain region. Importantly, amygdala-targeted neurofeedback did not lead to improved PTSD symptoms, whereas PCC-targeted neurofeedback was associated with reduced reliving and distress symptoms.

Conclusions: Taken together, neurofeedback-mediated regulation of the PCC, as opposed to the amygdala, appears to be differentially associated with reductions in PTSD symptoms and normalized PTSD-associated alterations in brain activity during a single training session. This novel analysis may guide researchers in choosing a neurofeedback target region in future rt-fMRI-NFB studies and may help to establish the clinical viability of specific neurofeedback targets for PTSD.

4A02: The mental health needs of middle-aged veterans: evidence from the Trends in Scottish Veterans' Health Study

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Introduction: In recent years there has been widespread popular concern that young service leavers are at particular risk of mental ill-health, but few studies have examined the age profile of veterans presenting with mental disorders in comparison with the wider community to explore whether this group exhibits the highest risk. We used data from the Trends in Scottish Veterans' Health cohort to examine the age profile of veterans admitted to mental health secondary care in-patient and day care facilities, in comparison with the non-veteran community.

Methods: Retrospective cohort study of 78,000 veterans and 253,000 non-veterans to 2017, drawn from computerised national health and vital records, matched for age, sex and geography, using survival analysis to compare risk of major mental health disorders by age/birth cohort. The findings were compared with an earlier overlapping cohort study to 2012 to identify trends.

Results: Based on up to 37 years of follow-up, the peak age for admission for mental ill-health was around 39 years in both veterans and non-veterans. When stratified by birth cohort, the highest risk compared to non-veterans for mental ill-health overall, and for common mental disorders individually, was in those born 1970-1984, peaking in the 1975-1979 birth cohort. The same cohorts had been at increased risk in the earlier study but the difference from non-veterans had worsened on follow-up. The increase in risk was mainly driven by early service leavers (<3 years' service) except for post-traumatic stress disorder (PTSD) which was independent of length of service.

Conclusions: Analysis of secondary and mental health care data does not support the popular stereotype of mental ill-health predominantly affecting young veterans. Instead, it is middle-aged veterans who are most likely to be affected, and the problem is becoming more severe, especially in respect of PTSD. It is essential that support for veterans' mental health is targeted at all age groups, including middle-aged and older veterans who may be facing the late effects of trauma from previous conflicts but who may feel sidelined by recent emphasis on the mental health of younger Iraq and Afghanistan veterans.

4A03: A Scoping Review and Environmental Scan to Understand and Identify the Health and Well-Being of Older Veterans in Canada

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Introduction: The Veteran Affairs Canada (VAC) report, *Keeping the Promise, the Future of Health Benefits for Canada's War Veterans* notes that Veterans are like all older Canadians who are coping with the effects of aging, but they are unlike other Canadians in that they may also be coping with the long-term impact of military service on their health and well-being. Military service is considered a hidden variable associated with aging, wherein the biopsychosocial health effects of military service are lifelong but seldom considered in older adults. Studies conducted in both the U.S. and Australia have found Veterans over the age of 60 have higher rates of chronic illness, activity limitations, and self-rated mental health compared to the general populations. Similarly, older Canadian Veterans experience greater activity limitations and mental health problems compared to the general population. Compounding this, it is predicted that by 2026, 33% of Canadian Armed Forces Veterans will be 70 years or older. With this large cohort of Canadian Veterans entering older adulthood this

decade, there is an urgent need to better understand their unique health and well-being. Developing a focussed research strategy to address gaps in the literature can contribute to the development of services, programs, and policies to support older Veterans health and well-being needs.

Methods: A scoping review using Arksey and O'Malley's (2005) framework will be conducted to map the range and nature of research on older Veterans in Canada and to identify gaps in knowledge. Results from the scoping review will be used to conduct an environmental scan to identify the types of physical and mental health, and social services available to older Veterans across the globe.

Expected Results: The findings from this study are pending and will provide foundational knowledge on older Veterans in Canada and a proposed framework for an evidence-informed research strategy on the health and well-being needs of older Veterans in Canada.

Conclusions: An evidence-informed research strategy is an effective approach to identify critical needs and gaps in health and well-being services for older Veterans in Canada. Addressing the changing health needs of older Veterans as they age is an essential part of fulfilling our social contract for their years of military service.

4B01: Differences in Self-Reported Mental Health among Canadian Veterans: A Comparative Analysis of Data from the Life After Service Survey and Canadian Longitudinal Study on Aging

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Introduction: According to data from the Life After Service Survey (LASS) 29% of Veterans of the Regular Force reported fair or poor mental health in 2019 (Sweet et al., 2020). This is significantly higher than the 9% of the Canadian population reporting fair or poor mental health in the 2019 Canadian Community Health Survey (Statistics Canada, 2020). Given the implications of such a high prevalence of poor mental health for the Veteran community, it is important to substantiate the mental health status of Veterans in Canada and to identify potential risk or protective factors. The Canadian Longitudinal Study on Aging (CLSA) includes a Veteran subsample and provides an opportunity to explore the self-reported mental health in a Veteran sample. The purpose of this study will be to: i) determine if prevalence of self-reported mental health is similar for the Veteran cohort in the CLSA compared to LASS and ii) evaluate if socio-demographic, behavioural, and health factors are differentially associated with self-reported mental health in the CLSA Veteran cohort compared to the LASS.

Methods: This is a secondary data analysis with data coming from the 2019 LASS and the second follow-up of the CLSA. Participants for the LASS were $N = 2,411$ Veterans of the Regular Force ($M_{age} = 50$; 87% male). $N = 3,558$ participants ($M_{age} = 63$; 89% male) of the CLSA who self-identified as Veterans of the Regular Force ($n = 2,172$) and Reserve Force ($n = 1,126$) were included in the preliminary analyses.

To better understand differences in prevalence estimates, logistic regression models will be run separately with each dataset. Self-reported mental health will be entered as the outcome variable with socio-demographic (e.g., sex, income), behavioural (e.g., alcohol use), and other health measures (e.g., anxiety, mood disorder) entered as predictors.

Results: Preliminary analyses showed differences between the prevalence of self-reported mental health in the CLSA compared to the LASS. 29% of LASS participants reported fair/poor mental health while 48% reported very good/excellent mental health. Conversely, approximately 8% of Veterans in the CLSA reported fair/poor mental health and 63% reported very good/excellent mental health.

Conclusions: It is expected that results will show variables to be differentially associated with self-reporting fair/poor mental health in CLSA participants compared to LASS participants. If supported, this will highlight the need for more comprehensive and intersectional data to better inform policy and programming for Veterans in Canada.

4C02: Network analysis exploring the association between posttraumatic stress disorder and moral injury symptoms in Veterans

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[1]MacDonald Franklin OSI Research Centre; [2]Western University; [3]Veterans Affairs Canada; [4]McMaster University; [5]St. Joseph's OSI Clinic

Introduction: The interactions and structure of metrics used to understand disorders like posttraumatic stress disorder (PTSD) and morale injury are complex and can be difficult to conceptualize without visual aids; network analysis approaches allow for easier comparison of these interactions. With this, clinicians and researchers can better understand common presentations of specific disorders, and co-occurance of symptoms with related problems, supporting transdiagnostic conceptualization. Earlier work successfully replicated a network analysis from a U.S. sample with Canadians. Previous applications of network analysis have been limited to cross-sectional surveys, leading to questions surrounding reproducibility and stability of symptom typologies over time. We investigate the longitudinal stability of the network structure of PTSD and moral injury symptoms in a large longitudinal survey of Canadian Veterans.

Methods: Data were drawn from two samples of Canadian Veterans – a longitudinal community survey exploring well-being during COVID-19 (7 points over 1.5 years; n=1,535 at baseline) and a sample of Veterans seeking mental health treatment for operational stress injuries (OSIs; n =642). We reproduce our prior methodology, a replication of a network analysis on U.S. Veterans, using regularized partial correlation models. This network analysis focuses on the 20 DSM-5 PTSD symptoms for the first set of networks, with an introductory look at items from the Moral Injury Outcome Scale (MIOS) in a subsequent exploratory step. Next, network structure changes which occurred during the pandemic were explored. For both experimental setups, the network was produced for all time points of the survey.

Results: We reproduce overall topology of previous Canadian treatment-seeking Veterans studies, observing a strong similarity to prior results of DSM-5 PTSD symptoms in this community sample. Differences observed are in network strength, closeness and betweenness metrics. These reproduced more closely in ; metrics differ in our community sample. We observe that network, closeness and betweenness changes are consistent over time. We also observed that MIOS items clustered together with little PTSD symptoms overlap, showing these are distinct but related constructs.

Conclusions: The overall topology and similarity of connections in PTSD symptoms between treatment seeking and a community population of Veterans is supportive overall network structure robustness for PTSD symptoms. The differences in network structure between these cohorts could indicat of the way pathology develops in PTSD that is seen at clinics like the MacDonald Franklin OSI Clinic. Further exploration of network topology of PTSD and related constructs like moral injury are needed to develop further understanding of post-trauma pathogenesis.

4C04: Latent profiles of moral injury and their associations with longitudinal mental health symptoms in Canadian Armed Forces Veterans and health care workers

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Introduction: Moral injury (MI) refers to the psycho-spiritual distress that may arise in response to events that deeply transgress an individual's moral beliefs and values. Such experiences are common in the military context, with up to 65% of Veterans endorsing these (Hansen et al., 2021). While previous research supports the clinical relevance of MI (Hall et al., 2021;

Griffin et al., 2019; Nazarov et al., 2018), more research is needed to identify whether specific patterns of MI are clinically informative. In addition, given that the MI construct arose from the military mental health literature, understanding its generalizability would support construct validity for MI, extending its utility beyond the military context to other occupational settings. The aim of this study was to identify patterns of MI, and to examine their associations with symptoms of posttraumatic stress disorder (PTSD), depression, and anxiety longitudinally.

Methods: Using two longitudinal datasets (Veterans; *n*=387 and health care workers (HCWs); *n*=270) collected during the COVID-19 pandemic, we conducted a latent profile analysis using the Moral Injury Outcome Scale (MIOS; Litz et al., 2022). We assessed particular items' relevance in differentiating profiles by analyzing mean comparisons of indicator (item-level) scores by profile group. A linear mixed model for longitudinal data assessed profiles' associations with psychiatric symptoms over time. Finally, multinomial logistic regression analysis was conducted to examine predictors of MI profile membership.

Results: The LPA showed that a 3-profile solution best fit both samples (healthy, low-MI and high-MI). Effect sizes for mean comparisons of indicator scores suggested that, in both samples, items indicative of shame most strongly differentiated profiles, with the largest effect size observed for the item "I have lost pride in myself" among Veterans (η^2=0.61). In high-MI Veterans, avoidance, cognition/mood, anxiety and arousal scores decreased the first 6 months then leveled off. In high-MI HCWs, all symptoms remained consistent over the pandemic, with the exception of anxiety which decreased the first 6 months before leveling off. Logistic regression models showed that predictors of profile membership differed between Veterans and HCWs.

Conclusions: Consistent with theory, findings suggest shame may be a driving factor in MI distress. Differences observed among Veterans and HCWs may represent differences in acute versus chronic stress reactions, though further research is needed to replicate and extend findings beyond the pandemic context. Findings may be useful in guiding transdiagnostic case conceptualization and treatment in cases where features of MI may be present.

5B02: "It was honestly horrific." Female Veteran's Experiences of Reporting Sexual Offences in the United Kingdom Service Justice System

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[1]Anglia Ruskin University

Introduction: Sexual offending in the UK armed forces has been characterised as an 'epidemic' (Edwards, 2022), with female personnel particularly at risk. Servicewomen are more than ten times as likely as servicemen to experience sexual harassment

and twice as likely to be sexually assaulted (House of Commons Defence Committee, 2021). Yet, whilst 52% of UK female veterans report experiencing sexual assault during their military career (Edwards & Wright, 2019), formal reporting is estimated at just 5% (MOD, 2006; British Army, 2015), and of those who do report, 75% suffer negative consequences as a result (Speak Out, 2018). However, despite the distinct overrepresentation of servicewomen as victims of sexual offences in the service justice system (MOD, 2020a), there has been a paucity of research in the UK context examining servicewomen's experiences of sexual victimisation and the military response. This study aimed to fill this gap in knowledge, providing qualitative insights into female veteran's experiences of sexual victimisation and to identify issues that contribute towards the dissatisfaction that many report with the service justice response.

Methods: Utilising an exploratory-descriptive qualitative approach (EDQ; Hunter, McCallum & Howes, 2019), we carried out eight, semi-structured interviews with UK female veterans who had experienced some form of sexual victimisation during service. Interview questions focused on participants' experiences of sexual victimisation, their decision of whether to make a formal report, the service justice response and broader impacts on their wellbeing and military career. Questions were purposely broad, enabling participants to reflect upon whatever they perceived as the key issues related to their experience. Thematic analysis is currently being undertaken using Nvivo software to establish key trends and issues that emerged through victims' discussions of these topics.

Results: Initial analysis has revealed numerous problematic practises within the UK military response to sexual offending, including diverse barriers to reporting, a perceived lack of support for victims who do report, negative social and career repercussions following a report, and long-standing personal and health impacts for victims.

Conclusions: Though some positive experiences were discussed by participants, the preliminary findings overwhelmingly reveal the distinct and widespread challenges faced by victims of sexual violence in the UK military. As such, the study seeks to amplify these victims' voices and experiences, to campaign for meaningful and directed improvements and remove barriers to justice, in the military response to sexual offending.

6B03: A Theory of Subjective Health Needs of Women Veterans (Compared to Men Veterans)

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Introduction: International research suggests that women veterans may have different experiences during their deployment and, subsequently, different health needs as compared to men veterans. This qualitative study, financed by the Netherlands Ministry of Defence, compared the subjective health needs (SHN) of women and men veterans before, during, and after their deployment(s) to Afghanistan (ISAF) and/or Mali (MINUSMA). We focused on the stressors, coping styles, social support, to understand the SHN of women and men veterans. We are currently (April 2023) finalising our analyses.

Methods: We used a mixture of purposive and snowball sampling to recruit veterans. Veterans in the Netherlands consist of active-duty and former military personnel who were deployed to a combat zone or peace (enforcing) mission. We interviewed 46 women and 48 men who were deployed to ISAF and/or MINUSMA. The men included in this sample mirrored the functions of women (mostly combat support and non-combat positions) for a realistic comparison. The semi-structured interviews lasted on average between 90-105 minutes. We applied *iterative thematic inquiry* to formulate the main themes.

Results: This study reveals differences in types of stressors (e.g. less direct combat stressors, more social stressors, including (sexual) transgressive behaviour), differences in social cohesion and support (acceptance of women in a unit, social vs. sexual interest of colleagues), coping styles, and in help-seeking behaviour (quicker, but sometimes not taken seriously) leading to small but relevant differences in SHN. Women want to be *one of the guys* which may result in overcompensating and losing oneself. The type of deployment (unit deployment versus various types of non-unit deployment) may complicate the experiences of women as women more often have non-unit deployments. Practical issues such as urinating and menstruation - more relevant for women who worked in combat (support) functions or occasionally leave the base - and unisex versus sex-specific sanitary and sleep facilities show the importance of thnking about women's privacy, hygiene and health needs in a male dominated context.

Conclusions: The Netherlands Armed Forces is a masculine and man-oriented organisation. The realities and needs of women (eg women health, motherhood, gender norms) are often blind spots for the organisation or ignored. The underrepresentation of women in the Netherlands Armed Forces, and even more in a deployment context, results in partially different stressors, coping styles, social support and SHN as compared to men veterans. We propose a coherent Theory of Subjective Health Needs of Women Veterans based on these differences.

6B05: Co-designing mental health guidance with women veterans

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[1]Anglia Ruskin University

Introduction: This presentation focuses on the co-design of mental health guidance for professionals working with women veterans *by women veterans*. This was undertaken as part of a wider project that sought to address the gap in our understanding of the mental health needs, and experiences of U.K. women veterans.

Methods: A co-design group members were purposively invited to capture a range of service branches, eras, ranks, and service lengths. Throughout the project, the co-design group met 3 times formally to discuss various aspects of project design, with email consultation in-between.

Meeting 2 was a full-day workshop to develop initial ideas for guidance for mental healthcare professionals working with women veterans, and broader recommendations for both mental healthcare professionals. Preliminary findings from the wider project were shared and discussed. Following this, interactive activities were undertaken in breakout groups. The outcomes of these activities were then discussed as a group to begin to develop a consensus around draft guidance and potential recommendations.

Meeting 3 was held online with the group working together to evaluate and refine a preliminary draft of the guidance for mental healthcare professionals. Iterative consultation continued by email. This guidance has been initially evaluated by mental health professionals, via an online survey.

Results: This presentation will focus on reflections from the researchers on the value and importance of co-design to the development of this guidance. As well as what worked well such as 'pie in the sky & quick win' and 'top five tips' activities, and lessons learned along the way.

Final guidance was structured around the 6 principles of trauma-informed practice outlined by the UK government (safety, trustworthiness, choice, collaboration, empowerment, and cultural consideration). Each section focused on one principle applied to the context of supporting women veterans, highlighting relevant findings from the wider project including quotes from women veterans, and examples of best practice.

Preliminary evaluation of the guidance is positive, with professionals endorsing that the guidance was easily understood (80%), has improved their understanding of trauma-informed care (88.9%) and the potential mental health needs of women veterans (77.8%). 87.5% agree or strongly agree that they would be likely to sue this guidance to inform their role or service.

Conclusions: This presentation will focus on how the co-design of guidance was undertaken, and what activities were particularly helpful in generating ideas and prompting discussion. The value and strength that engaging co-design with members of the military community brought to this project.

7A01: Remote versus in-person cognitive behavioral therapy: A systematic review and meta-analysis of randomized trials

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Introduction: Many Canadian veterans live in areas in which access to healthcare may be difficult, and remote delivery of healthcare services may represent an opportunity to reduce barriers to care. Cognitive behavior therapy (CBT) has been shown effective for several conditions that affect veterans, including chronic pain and mental illness; however, most trials have administered in-person therapy and it remains uncertain if remote delivery is similarly effective.

Methods: We searched MEDLINE, EMBASE, PsycINFO, CINAHL, and Web of Science from inception to May 11, 2022, for trials that: (1) enrolled adults (≥18 years) presenting with any psychiatric or somatic disorder, and (2) randomized them to guided remote CBT or in-person CBT. Paired reviewers independently assessed risk of bias and extracted data. We performed random effects model meta-analyses to pool primary outcome measures across eligible trials, used GRADE to assess the certainty of evidence and ICEMAN to rate the credibility of subgroup effects.

Results: A total of 32 trials that enrolled 2,962 patients were eligible for review. Ten studies focused on treatment of anxiety and related disorders, six on depressive symptoms, three on chronic pain, four on body image/eating disorders, four on insomnia, three on chronic tinnitus, one on alcohol use disorder, and one on insomnia with depression. In-person CBT was provided in group therapy and individual sessions.

High certainty evidence showed little to no difference in effectiveness on primary outcome measures between remote and in-person CBT (standardized mean difference = -0.07, 95% CI: -0.19 to 0.06). We found no evidence of credible subgroup effects based on clinical condition or individual vs. group in-person CBT. Our results are supported by a randomized trial of 196 adults with mild to moderate PTSD published after our literature search, which found therapist-guided internet-delivered CBT was non-inferior to individual face-to-face CBT.

Conclusions: High certainty evidence shows little to no difference in effectiveness between in-person and therapist-guided remote CBT across a range of psychological and somatic disorders. Access to CBT is an important barrier for many Canadians, particularly those living in remote or rural areas – including veterans and indigenous populations, both of which are at higher risk for chronic pain and mental illness. Our findings suggest that Canadian provinces and territories should consider funding access to therapist-guided remote CBT to facilitate greater access to evidence-based care.

7A02: Evaluating the effectiveness of delivering Cognitive Processing Therapy in an intensive format for the treatment of posttraumatic stress disorder in an Operational Stress Injury context

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Program/Intervention Description: Cognitive Processing Therapy (CPT) is an evidenced based therapy that modifies, and challenges individuals' unhelpful beliefs related to trauma. Intensive evidence-based treatments have resulted in accelerated symptom improvement, increased treatment efficiency; and increased treatment access and retention. The Operational Stress Injury (OSI) Clinic is piloting an intensive outpatient CPT program to reduce traumatic stress symptoms for current and former members of the Royal Canadian Mounted Police and Canadian Armed Forces diagnosed with PTSD. CPT will be delivered over the course of 8 weeks and consist of two virtual or in-person 90-minute sessions per week, and a psychiatric consultation at least once during the program. Clients are encouraged to attend weekly psychoeducation and trauma sensitive yoga sessions.

Evaluation Methods: Inclusion criteria for the program include clear posttraumatic stress disorder as a primary treatment target, no significant psychiatric comorbidities requiring separate treatment focus (e.g., unmanaged substance use disorder), no acute risk, client has a family physician, and the client's interest and ability to engage. Clients will complete the outcome questionnaire (OQ-45), patient health questionnaire (PHQ-9), post-traumatic check-list-DSM5 (PCL-5), generalized anxiety disorder questionnaire (GAD-7), and the insomnia severity index (ISI) pre-treatment, mid-treatment, post-treatment and at 3, 6, 9, 12 months post-treatment. Additionally, the OQ-45 will be completed weekly, and the PCL-5 twice weekly. A repeated measures ANOVA will be conducted to explore whether there are differences in scores over time.

A secondary objective is to explore participants' perspectives of the effectiveness of the program in managing their symptoms. Clinicians will discuss these with clients directly and a question-naire will be completed. An informal review of this feedback will be included in this presentation.

Results: This pilot will be running every 8 weeks starting March 6th, 2023. At the time of the abstract submission, we do not have data to conduct the analysis. However, at the time of the conference (i.e., October 2023) four rounds of treatment will be completed allowing us to share substantial outcome measures. We currently have eight participants in our first round, and we are expecting similar numbers for future rounds.

Conclusions: This pilot has the potential to add further validity to the utility of an intensive outpatient treatment program with this population. Furthermore, this study can contribute to the existing knowledge of the effectiveness of intensive treatment programs for PTSD.

7C02: "I am afraid you will see the stain on my soul": Neural processing of direct eye gaze in individuals with post-traumatic stress disorder following recall of a moral injury event

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Introduction: Direct eye-to-eye contact is essential to identifying and understanding the thoughts and feelings of others in social interactions. However, in individuals with post-traumatic stress disorder (PTSD) who have been exposed to a morally injurious event, the experience of shame can impair their ability to engage in direct eye contact. Further, these individuals can exhibit abnormal neural responses underlying these social cognitive processes, particularly those supporting theory-of-mind/mentalizing processes.

Methods: We investigated neural activation patterns associated with direct versus averted eye gaze using a virtual reality functional magnetic resonance imaging paradigm in civilians with PTSD ($n = 28$) relative to healthy controls ($n = 18$)

following recall of a morally injurious memory (MI) or a neutral memory.

Results: In the moral injury memory condition, we revealed that the PTSD group showed greater activation in the right temporoparietal junction (TPJ) as compared to the control group (pFDR < .001) during the direct gaze condition immediately following recall of a morally injurious memory. No significant activation was found during the direct gaze condition after recall of a neutral memory.

Conclusions: These findings demonstrate that individuals with PTSD experience alterations in neural processes involved with theory of mind. The threat of direct eye contact after recalling a morally injurious memory may prompt a pattern of compensatory neural activation as the individual struggles to evaluate their own sense of self in relation to others. Implications for future interventions aimed at mitigating the effects of PTSD on individuals' social and family functioning are discussed.

7C03: A Qualitative Analysis of the Nature and Impact of Deployment-related Encounters with Children

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Introduction: Children are increasingly engaged in armed violence in a variety of roles, adding to the complexity of contemporary armed conflicts (Østby, Rustad, Haer & Arasmith, 2022; Tynes 2018; Whitman & Baillie Abidi 2020). Deployment-related encounters with children (DREC) can present significant moral, ethical and strategic challenges to military personnel that may place them at risk of traumatic stress and other mental health related consequences. Yet, little research exists on the nature and impacts that DREC can have on military personnel. Such information is needed to improve guidance for policy makers and mental health practitioners to prepare military personnel for encounters with children, and to support those experiencing difficulties in their aftermath.

Methods: We conducted semi-structured interviews with Canadian Armed Forces Veterans who had experienced one or more deployment-related encounter with children (n=13, recruitment is ongoing and expected to be completed by July 2023). Questions pertained to the details of DREC (e.g., deployment location, mission role, engagement with children), the psycho-social-spiritual impacts of DREC, support in the

aftermath of DREC, and changes required to protect and support military personnel who risk exposure to DREC. Using thematic analysis (Braun & Clark, 2006), we analyzed interview transcripts and identified themes related to the nature and impact of DREC.

Results: Six main themes were identified in the analysis, each with several important subthemes: types of encounters (e.g., child soldiers, ambiguous encounters), contextual factors (e.g., personal, mission-specific), appraisals of encounters (e.g., cultural dissonance, strategic/tactical appraisals), impacts of encounters (e.g., psychological, existential, operational), coping strategies (e.g., alcohol use) and sources of support (e.g., formal and informal sources of support). Themes are currently being evaluated against incoming data to assess their fidelity and to refine them if necessary. Data collection will end once no new information is gleaned from incoming data.

Conclusions: The nature and consequences of DREC are multifaceted and have a number of impacts that can affect the operational functioning and health of military personnel. Recommendations for prevention, intervention, and policy change in light of this research will be discussed.

7C04: Factors associated with trajectories of mental health symptoms in a large longitudinal community sample of Veterans

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Introduction: There is an implicit understanding that mental health symptoms and distress fluctuate and that these fluctuations and trajectories are not experienced equally. However, research exploring distinct patterns and longitudinal trajectories of mental health symptoms, including in Veterans, is limited by methodological challenges such as low sample size, biased sampling, participant attrition, and short data collection periods. Most research exploring symptom trajectories have been limited to clinical settings exploring effectiveness of treatment interventions, which limits generalization to the larger population and overlooks the opportunities to guide preventative strategies. This prevents an understanding of the nature of distinct classes of individuals mental health symptom trajectories over time (such as new onset, improvements, chronically elevated) and how social, psychological, and demographic factors influence these fluctuations. We aim to address these knowledge gaps using data from a large, 1.5-year-long longitudinal, nationwide sample of Canadian Veterans.

Methods: Using a longitudinal survey of Veterans collected during the COVID-19 pandemic (1.5 years, 7 time-points;

n included in modelling = 579), a growth mixture model (GMM) was used to identify classes of trajectories in PTSD and depression over 18 months. Classes were identified based on temporal trends and growth characteristics. Unlike longitudinal fixed-effects models, GMMs account for between-subject heterogeneity by including random effects that allows for more outcome flexibility and. Loglikelihood and BIC were utilized as metrics to evaluate model fit alongside observing unique trajectory classes (i.e., increasing or decreasing) for the psychiatric measures over time. A series of regressions were conducted to identify social, psychological, and demographic factors associated with each symptom trajectory class.

Results: Overall (at the group level), mental health symptoms of Veterans were relatively stable over the 1.5 year period. However, leveraging GMM, it was observed that a five-class model separated out a subset of Veterans who had either worsening symptoms or improving symptoms over time. Other three classes were Veterans with stable symptoms (i.e., none/minimal, moderate, high). Among the model variables tested, perceptions of loneliness, municipality size, and comorbid pain were significantly associated with new onset or worsening mental health symptoms over time.

Conclusions: Current work demonstrates the utility of growth trajectories when modelling mental health outcomes among Veterans in the community. Relying on group-based analyses of Veterans overlooks subsets of individuals with strong fluctuations and changes in mental health status. These findings may be useful in characterizing factors associated with a greater need and opportunity for early intervention among Veterans.

7E02: Evaluation of the Impact of an Arts Program for Veterans in the Community

Cruise, Danielle, MSc[1,2]

[1]*University of Ottawa;* [2]*Perley Health*

Program/Intervention Description: With Canada's aging population, older adults are at increased risk of developing multiple chronic illnesses. Compared to the rest of the population, older Veterans are more likely to have mental health conditions and cognitive impairments, which affects their overall quality of life and well-being. Arts programs have received considerable attention in recent years to foster social inclusion and allow older Veterans to age in place. In Canada, research on arts programs often focus on isolated older adults. More research is needed to better understand the impact of arts programs on community-dwelling older Veterans to inform programs that could help improve their quality of life and well-being. Therefore, this research presents the results of an evaluation of an arts program with community-dwelling older Veterans. The arts program consisted of once weekly, staff-led classes with various art mediums (e.g., mosaic tiles,

wreath making, watercolours, etc.) at Perley Health. Perley Health is a campus of care that includes 139 independent Senior Living Apartments in the Ottawa region.

Evaluation Methods: Older Veterans who live in the Senior Living Apartments at Perley Health and engaged in the arts program were invited to participate in a focus group to discuss their experiences. Managers and program facilitators were also invited to participate in semi-structured interviews, which lasted 30-90 minutes. Topics of the focus group and interviews that were explored include the experiences of the Veterans participating in the program, the impacts of the program on their health and quality of life, facilitators and barriers to their participation, and recommendations for future programs. All data collected is being transcribed and coded using NVivo software.

Results: Preliminary results suggest that the program had a positive impact on older Veteran's quality of life and well-being. The Veterans participating in the program perceived that the arts program presented opportunities to form social connections, promoted resiliency, and increased their sense of belonging. Managers and program facilitators perceived positive changes in the well-being and happiness of the Veterans participating in the program. Facilitators and barriers of the program were also identified.

Conclusions: The results of this study demonstrate the impact of an arts program for community-dwelling older Veterans. The lessons learned may be transferrable to other organizations looking to implement an arts program for older Veterans.

7E03: Evaluating the Impact of Therapeutic Recreation and Creative Arts on the Health and Well-Being of Older Veterans

Adams, Michaela, BHSc[1,2]

[1]*Perley Health;* [2]*University of Ottawa*

Program/Intervention Description: Perley Health is an innovative campus of care in the Ottawa region that is home to more than 600 older adults and Veterans in long-term care and independent apartments. Perley Health offers numerous opportunities for Veteran residents to engage in therapeutic recreation and creative arts activities including but not limited to individual and group music sessions, gardening, ceramics, woodworking, and painting. There is an assumed benefit to participating in creative arts programs but limited data is available surrounding how participation impacts Veteran residents living in long-term care. The objective of this evaluation was to assess the current therapeutic recreation and creative arts programs offered at Perley Health to determine how participation impacts the health and well-being of Veteran residents.

Evaluation Methods: Veterans living in long-term care, friends and family members of Veterans living in long-term care, volunteers, and staff were invited to participate in a confidential one-time interview. Interviews explored important topics related to Veterans experiences participating in creative arts programs including the type of activities they participated in, their motivations for participation, impact of participation on their quality of life, and recommendations to improve the current services offered.

Results: Results demonstrated that participation in therapeutic recreation and creative arts programs had a positive impact on the lives of Veteran residents living in long-term care. Participants indicated that creative arts program gave Veterans a sense of purpose, pride, and accomplishment. Additionally, participation in creative arts programs enhanced the quality of life of Veteran residents living in long term care.

Conclusions: The results obtained from this project demonstrate the positive impact creative arts programs have on the quality of life and well-being of Veterans living in long-term care. These findings increase our understanding behind the meaningfulness of participating in therapeutic recreation and creative arts programs. The results of this study can hopefully be applied to other long-term care homes and community organizations across Canada to benefit the lives of Veterans.

Poster Presentations

P157: Capacity Building to Address the Trauma Care Gap: Spread and Scale of 3MDR in the Canadian Context

Bremault-Phillips, Suzette, OT, PhD[1, 2]***;*** *Brown, Matthew, PhD*[1, 2]*; Vermetten, Eric, MD, PhD*[3, 4]*; Burback, Lisa, MD*[2, 5]

[1]Heroes in Mind, Advocacy and Research Consortium (HiMARC); [2]University of Alberta; [3]Leiden University; [4]ARQ National Psycho-trauma Center of The Netherlands; [5]Alberta Health Services

Introduction: Post-traumatic Stress Disorder (PTSD) is a complex disorder with contributions from genetics, premorbid developmental and adverse experiences, stress sensitization, altered neurocircuitry and neurohormonal responses, and contextual aspects of trauma. World events, such as the COVID-19 pandemic, war in the Ukraine, mass shootings, and civil unrest globally have highlighted the need for effective treatments to address trauma's consequences, including PTSD. However, multiple barriers contribute to successful recovery, and many patients with PTSD suffer from chronic and debilitating symptoms despite receiving first line therapies, demonstrating the need for treatment innovation. Further, there is a need to address issues of Equity, Diversity and Inclusion (EDI) limiting access to and engagement with trauma focused psychotherapy. Multi-modal Motion-assisted Memory Desensitization and Reconsolidation (3MDR) is a brief, novel, virtual reality assisted therapy, which targets factors linked to treatment failure. Initially successfully trialed in military populations, work is underway to study its scale and spread within mental health clinics. This includes establishing and evaluating a training program for therapists within community clinics. Opportunities to address EDI imbalances will also be discussed.

Methods: This implementation science study is exploring the scale and spread of 3MDR in real world contexts. A modified Delphi process is being used incorporating ongoing engagement among clinicians, researchers, health system administrators, policy makers, and other stakeholders to identify gaps, requirements, and constraints associated with spread and scale of 3MDR to multiple mental health clinical sites. Training program evaluation data are being collected with self-report questionnaires and participant interviews.

Results: Opportunities, requirements, and existing gaps have been and continue to be identified in terms of clinical capacity, clinical workflow, and administrative processes to support introduction of 3MDR therapy at multiple clinical locations. Feedback and evaluation data have been collected on the 3MDR training program, including multiple 3MDR training events, allowing for identification of areas of difficulty and fine tuning and improvement of the training program.

Conclusions: Spread and scale of 3MDR from its clinical research origins to the wider mental health clinical community and health system depend on collaboration among clinicians and researchers as well as health system administrators and policy makers and other stakeholders. 3MDR clinical training sessions are essential for increasing 3MDR clinical care capacity as well as generating organizational momentum to incorporate 3MDR into existing clinical care programs.

P160: An Exploration of Gender in Treatment Response following Participation in a Dialectical Behaviour Therapy Skills Training Group for Canadian Veterans and Royal Canadian Mounted Police

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[1]The Royal Ottawa Mental Health Centre, Operational Stress Injury Clinic

Program/Intervention Description: The Royal's Operational Stress Injury (OSI) Clinic offers services to Canadian veteran and Royal Canadian Mounted Police (RCMP) service members. Dialectical Behaviour Therapy (DBT) Skills Training Group is a group-based treatment that emphasizes skills development as a means of increasing capacity to regulate emotions and behaviour. The Royal's OSI Clinic offers a 12-week DBT Skills Training Group that outlines four core skills modules: mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. The current study will explore pre-post self-report data between male and female group participants to underscore possible gender differences.

Evaluation Methods: Since CIMVHR's 2019 Annual Forum our sample size has more than doubled. To date, a total of 162 outpatients have participated in a DBT Skills Training Group. To examine pre-post changes, self-report surveys are administered before the start of group and at the end of group: the Emotion Regulation Questionnaire, the Toronto Alexithymia Scale, the Difficulties in Emotion Regulation Scale, and the Outcome Questionnaire. A post-group client feedback survey is administered to explore group member experience, such as which core skills module was deemed most useful.

Results: Ongoing enrollment into this group will continue to increase the sample size. Using the entire sample, paired-samples t-test output demonstrates statistically significant pre-post group differences in self-report data: increased use of effective emotion regulation strategies, decreased perceived difficulties in emotion regulation, improved ability to identify and describe emotions, and improved global functioning. Independent samples t-tests to explore gender differences revealed no statistically significant differences between males and females. However, the post-DERS score difference for males and females was trending toward statistical significance ($p=.052$) where females reported a significantly lower total score than males. Paired samples t-test output for males and females separately are similar to output using the entire sample suggesting global improvements for both males and females.

Conclusions: Findings still suggest that participation in a 12-week DBT Skills Training group improves emotional and behavioural stability and quality of life. Results also continue to support DBT Skills Training group as an effective adjunct to trauma-focused therapy. While there were no statistically significant differences between males and females, the greatest improvement by post was seen for females on the DERS. Perhaps a larger female sample size will influence statistical significance at a later analysis. Boosting enrollment of women into the DBT Skills Training group is an important consideration in better understanding the influence that gender may have on group outcomes.

P162: Modifying a digital intervention to support female veterans in the United Kingdom who drink at a harmful and hazardous level: Findings from the DrinksRation study

Williamson, Grace, MSc[1]; Leightley, Daniel, PhD[1]

[1]King's College London

Introduction: Estimates of the UK Armed Forces (AF) veteran population, defined by the British Government as those who have served in the military for at least one day, is approximately 2.5 million, of which 11.4% are estimated to identify as female. Female veterans have served within the AF for over 100 years. While their valuable contribution has been recognised, military culture, together with evolving Service requirements, have had a significant impact on the health and well-being of many. Yet, there is a dearth of evidence on the impact of alcohol use on female veteran health.

Methods: We performed a two-arm participant-blinded (single-blinded) randomised controlled trial. We compared a smartphone app that included interactive features designed to enhance participants' motivation and personalised messaging (intervention arm) with digital advice provided by the UK Government. Adults were eligible if they had served in the UK Armed Forces, consumed 14 units (approximately 112g of ethanol) or more of alcohol per week and identified as female. Participants received the intervention or control smartphone app (1:1 ratio). The primary outcome was change in self-reported weekly alcohol consumption between baseline and day 84 assessed using the Time-Line Follow Back for Alcohol Consumption.

Results: The study is currently under way and the results will be ready for presentation at CIMVHR Forum as a poster in October 2023.

Conclusions: This study assesses whether a smartphone app is efficacious in reducing self-reported alcohol consumption in a female veteran population using personalised messaging and interactive features. This innovative approach, if successful, may provide a means to deliver a low-cost health promotion program that has the potential to reach large female veteran groups, in particular those who are geographically dispersed, and dethatched from routine clinical care.

P170: Modeling of PCL-5, GAD-7 and PHQ-9 Simultaneously in a Longitudinal Study of Veterans during the COVID-19 Pandemic

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Introduction: Analytical approaches are necessary to discover quantitative relations between measures of symptoms of posttraumatic stress disorder (PCL-5), generalized anxiety disorder (GAD-7), and depression (PHQ-9), and in combination these provide a more holistic overview of a patient's mental health. Challenges come from considering disorders in isolation of each other, or even in separate models when trying to interpret and action on the significant findings and association in the study. To address these concerns and study the predictors of mental health during a longitudinal study of Veterans over 18 months (baseline n=1535), we simultaneously model the changes in PCL-5, PHQ-9 and GAD-7 with a multivariate latent class mixed model (MLCMM).

Methods: We use MLCMM to model changes in total scores

for PCL-5, PHQ-9, and GAD-7 over an 18 month period, with timepoints every 3 months. We investigate several scenarios, from only one class to examine more classes (one to six) to select the best number of classes based on the Bayesian Information Criterion (BIC). For both the single and multiple class solution, we investigated the utility of the model with scale items from mental health continuum short form (MHC-SF), alcohol use disorders investigation test (AUDIT), and UCLA Loneliness scale (UCLA-LS) as predictors, along with demographic covariates. To manage the relation between outcomes, MLCMM requires specific linkage functions that best describe the relation between multivariate outcomes and the predictors; it was determined that linkage functions for PCL-5, PHQ-9 and GAD-7 were the beta function, 5-quantile-spline, and beta function, respectively.

Expected Results: Estimation of the number of classes indicated either a 2 or 3 class solution was preferable, but the 2 class solution had a strong imbalance of individuals (98.47%, 1.53%), so the 3 class solution was selected (59.35%, 36.83%, 3.82%). When evaluating predictors of our joint outcomes, it was observed that time, age, multiple MHC items, multiple AUDIT items, and multiple UCLA-LS were significant predictors ($p<0.05$).

Conclusions: One potential concern of predicting outcomes in isolation is that symptomology shift that indicates worsening mental state can be hidden in individual improvements in scales. The results seen here support the ability of these scales to be modeled simultaneously, and we are able to find significant predictors of the change in these scale items during the longitudinal survey performed. While too early to directly link to recommendations, these results are promising towards targeting specific symptoms that provide holistic improvements.

P171: Identity-based Trauma and Moral Injury: Minority Stress as a Potentially Morally Injurious Event

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Introduction: Sexual minorities are disproportionately affected by and exposed to chronic stress related to their stigmatized social identities. Minority stress exposure (i.e., discrimination, oppression, microaggressions, identity concealment) has been shown to result in mental health disparities among sexual minorities. Associations between minority stress exposure and trauma-related symptoms have been shown to be mediated by shame, which is a core component of moral injury. Indeed, chronic exposure to minority stress may prime sexual minorities to both experience their own identity, as well as others' reactions to it, as a moral transgression, leaving

sexual minorities more vulnerable to moral injury and other adverse psychiatric outcomes. The primary goal of this study was to examine the core features of moral injury among sexual minorities using a mixed-methods approach.

Methods: We adapted the Moral Injury Event Scale (MIES) for use with sexual and gender minorities and collected both quantitative and qualitative interview data using a convergent mixed-methods design. Study participants (*n*=40) were recruited across Canada and included survivors of the LGBT Purge, active-duty military members, Veterans, and civilians who identified as sexual orientation minorities. Participants also completed a comprehensive DSM-based clinical assessment to capture the psychological impact associated with minority stress exposure.

Results: In this study, we describe four core themes surrounding moral injury development among sexual minorities, which include shame/internalized stigma, attachment injuries, guilt, and betrayal/loss of trust. Unique thematic specifiers were identified, which provide novel insight into the contextual presentation of moral injury among sexual minorities. We discuss how these core themes both converge and diverge from our current understanding of moral injury. Furthermore, moral injury severity using the adapted MIES was found to be associated with adverse mental health outcomes.

Conclusions: This is the first mixed-methods study to examine minority stress as a potentially morally injurious event capable of initiating moral injury symptoms among sexual minorities. Our program of research has the capacity to help military members and Veterans, as well as LGBT Purge Survivors, who have been psychologically injured by minority stress experiences. Results from the current study have the potential to inform novel treatment interventions aimed at addressing transdiagnostic symptoms in those affected by minority stress and moral injury. Moving forward, moral injury may be a useful framework by which to better understand trauma-related symptoms and mental health disparities among sexual minorities.

P174: Mental health-related emergency department visits: a comparison between Veterans residing in Ontario and the general population

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[1]*University of Toronto;* [2]*Lawson Health Research Institute;* [3]*Institute for Work and Health;* [4]*ICES;* [5]*Centre for Addiction and Mental Health;* [6]*Queen's University*

Introduction: Emergency departments (EDs) are a vital part of the provincial mental healthcare system, at times acting as a gateway to continuous, community-based mental health (MH) services. This may be particularly true for Veterans of the Canadian Armed Forces (CAF), who transition from federal to

provincial healthcare coverage on release from the Forces, and who may experience delays in obtaining a primary care provider. The objectives of this research were to: 1) estimate the proportion of Veterans who access Ontario EDs for a MH concern following release from the CAF; 2) consider potential sex-based differences in the hazard ratios (HRs) of ED use for mental health concerns between Veterans and civilians; and 3) understand how length of service further influences HRs of ED use for mental health concerns.

Methods: We used administrative healthcare data from 18,837 Veterans and 75,348 age-, sex-, geography-, and income-matched civilians residing in Ontario, Canada between April 1, 2002 and March 31, 2020. Unadjusted and adjusted Anderson-Gill regression models were used to estimate the HR of recurrent MH-related ED visits during the period of follow up. Sex and length of service were used as stratification variables in the models. Mean cumulative functions were also estimated.

Results: Overall, Veterans had a higher adjusted HR of MH-related ED visits than members of the Ontario general population (aHR = 1.97, 95% CI:1.70-2.29). When stratified by sex, a stronger effect was observed for females (aHR = 3.29, 95% CI: 1.96-5.53) than males (aHR = 1.78, 95% CI: 1.57-2.01). Length of service also influenced the adjusted HRs, with Veterans who served for 5-9 years having a much higher rate of use than civilians (aHR = 3.76, 95% CI: 2.34-6.02) and a notably lower rate being observed among Veterans who served for 30+ years compared to civilians (aHR = 0.60, 95% CI: 0.42-0.84).

Conclusions: On average, Veterans had a higher rate of ED visitation for MH concerns compared to civilians, but this association was modified by both sex and length of service. These findings may suggest differences in access to mental healthcare and have implications for the planning and delivery of MH services in Ontario.

P175: What We Have Done and What We Have Not Done: Exploring Moral Injury in Military Service Members and Veterans

Thorne, Oliver, BA[1]; McDaniel, Matthew, PhD[1]; Lapsley, Sara, MA[1]

[1]Veterans Transition Network

Program/Intervention Description: The Veterans Transition Network (VTN) offers group programming to male and female veterans across Canada. Active since 1998, the program is delivered by a team of clinicians and paraprofessionals. VTN program delivery was impacted during the COVID-19 pandemic, resulting in shortened skill-based only programming (TSC). As the pandemic has receded, a new comprehensive program evaluation protocol has been implemented, along with the reintroduction of our group-based therapeutic enactment programming

(TEC) with a focus on trauma repair. Preliminary results with cohorts beginning in 2021 suggested high levels of depressive symptoms, moral injury, anxiety, PTSD, substance use and loneliness in group participants at baseline.

With additional data from VTN cohorts collected in 2022 we specifically examined moral injury prior to and post group as well as at a 3 month follow-up. We describe how specific interventions such as life review (TSC) and therapeutic enactment (TEC) offered by the VTN may address moral injury.

Evaluation Methods: Male and female VTN participants from across Canada completed the Moral Injury Symptom Scale-Military Version Short Form (MISS-M-SF) in both official languages at the beginning and at the end of group programming as well as at a 3 month follow up survey. The MISS-M-SF is widely used to screen for moral injury and evaluate response to therapeutic interventions. It assesses facets of moral injury including: guilt, shame, moral concerns, loss of meaning and trust, difficulty forgiving, self-condemnation and impact on spiritual beliefs.

Results: All participants (n= 109) reported moral injury ranging from mild (27.5%), moderate (61.5%) to severe (11.0%). Average total score on the MISS-M-SF was reduced from pre to post and from post to 3 month follow up, though these differences were not statistically significant. There were no significant differences between male and female participants in the average total score, although males were significantly more likely to have higher scores on the item related to violation of morals or values (p = .015, d = 3.2) and females were more likely to endorse higher levels of perceived betrayal (p =.03 d= 2.72).

Conclusions: Participants in our TSC group reported high levels of moral injury prior to group. As we continue to evaluate more cohorts who have completed the therapeutic enactment portion of the program, we expect to see more significant reductions in moral injury as the therapeutic enactment intervention more directly addresses events that may have initiated symptoms related to moral injury in group participants.

P178: A Qualitative Exploration of United Kingdom Ex-Serving Personnel's Experiences of Seeking Help for Self-Harm, Suicidal Ideation and Suicide Attempts: Preliminary Findings

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[1]King's College London

Introduction: Members of the Armed Forces encounter unique occupational experiences which can affect their health and wellbeing during and after service. The rates of self-harm and suicidal behaviours among the United Kingdom (UK) Armed Forces were previously low but have increased

in recent years and since 2017 have been comparable to the UK general population. A substantial proportion of military personnel in the UK who experience mental health problems do not seek professional support. Even though promoting individuals to seek help is a key suicide prevention strategy, little is known about the experiences of UK Armed Forces personnel when seeking/not seeking help for self-harm and suicide behaviours. The aim of this study is to qualitatively explore UK ex-serving personnel's experiences of seeking help for self-harm, suicidal ideation, and/or suicide attempts.

Methods: Ex-serving personnel (n = 15-20) who self-reported self-harm, suicidal ideation and/or suicide attempts measured using the Clinical Interview Schedule Revised will be recruited into the study. Participants will be recruited from a larger longitudinal study exploring the health and wellbeing of the UK Armed Forces, the King's Centre for Military Health Research Health and Wellbeing Study. Where possible, a range of participants will be recruited into this qualitative study including (1) those who did and did not seek help, (2) those who sought help formally via clinical services or informally through friends and family, (3) men and women, and (4) individuals from each of the tri-services. Participants will take part in a semi-structured telephone interview about the causes and context of their self-harm and suicide behaviours, and their experiences of seeking or not seeking help for these behaviours, including the barriers and facilitators faced. The audio-recorded interviews will be transcribed verbatim and analysed using reflexive thematic analysis.

Expected Results: Data collection for this study is due to finish in October 2023. Key themes from the interview transcripts will be presented.

Conclusions: Based on preliminary findings which will be available by October 2023, recommendations for future research and implications for research, policy and practice will be discussed. Understanding the barriers and facilitators faced by UK ex-serving personnel accessing support for self-harm and suicide behaviours may provide a means for helping ex-serving personnel to access support sooner and lessen the impact on their health and wellbeing. Additionally, these factors should be carefully considered when developing and implementing prevention and intervention methods for this unique occupational group.

PRIMARILY PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

1C02: Narratives of Chronic Pain from United Kingdom Armed Forces Veterans

Kersey, Thomas, PhD[1]

[1]Anglia Ruskin University

Introduction: This PhD thesis explores the experiences of

14 veterans of the UK Armed Forces who live with chronic pain. While there is a wealth of data exploring chronic pain in Armed Forces veterans, existing literature overwhelmingly views chronic pain through a quantitative lens which does not explore the depth of chronic pain lived experience as a result of this; therefore, it is unclear how veterans live with and manage their chronic pain.

Methods: Participants' stories of living with chronic pain were collected and analysed using dialogical narrative analysis and the analytical lens of autobiographical time, to detail veterans' stories of living with chronic pain, and how they use these stories to make sense of their pain experience in the context of their identity as a veteran.

Results: The analysis identifies that the participants understood and made sense of their chronic pain experience through three distinct storytelling phases. The first of these were stories of the military body, and this situated a career that was marked by physicality and the churn of life within the military institution. The second phase of storytelling was about the stigmatised body. These stories situate the attitudes toward pain and weakness within the military and the consequences of showing that the military body is infallible, which in turn inform stoic attitudes toward pain and personal pain management. The final phases of storytelling were told about the moving body, stories about the moving body were about making sense of a new body with pain, how some movement is avoided, the consequences of this on identity and how movement is used to understand, learn, respond to and from their bodies on any given day.

Conclusions: This is the first in-depth qualitative study that explores the lived experiences of veterans with chronic pain. It found narratives about chronic pain were told in the context of military experience and how the culture of the military shapes attitudes toward chronic pain, while movement was a keyway in which participants veterans live with and manage their chronic pain. Importantly this research details how previous sociocultural experiences influence current lived experience of chronic pain.

7B01: Having Safe Conversations about Uncertainty: Findings from an Interprofessional Workshop with Experts by Experience, Experts in Communication, and Medical Students

Engward, Hilary, PhD[1]; Kersey, Thomas, PhD[2]

[1]Blesma: The Limbless Veterans

Brief Description: This paper details findings from an inter professional workshop on having Safe Conversations to assist those living with loss of limb use manage uncertainty. The need for this workshop was informed from collaborative

research with Blesma: the limbless veterans, the UKs lead charity supporting veterans with loss of limb/s and/or loss of limb use/function, funded by Forces in Mind Trust (FiMT), exploring how families live with acquired loss of use of limb/s using Grounded Theory Methodology (n = 84). Analysis detailed a main cause of concern of veterans and families was managing uncertainty and how to have safe conversations about uncertainty. The concept of uncertainty is presented in a in parallel presentation: Understanding Uncertainty: the family experience of living with acquired loss of limb/s.

Patient Population: As a direct result of this finding, we implemented inter professional training on how to have Safe Conversations about Uncertainty. This workshop was led by experts of Launer's model on communication, based within narrative studies, communication theory and systems thinking. This implementation of Launer's work was highly unique: the workshop centred veterans with acquired loss of use of limb/s as Experts by Experience, Blesma Support Officers, and 25 undergraduate medical students. Its aim was to learn together, and to practice, how to talk safely about disability and resultant possible uncertainties.

Results: This presentation firstly explains Launer's theoretical model, and its application to nurture Safe Conversations about Uncertainty in relation to living with loss of use of limb/s. Secondly, we present written and visual recorded examples of the inter professional workshop (with consent of participants), and thirdly, reflections post workshop across the Experts By Experience, Blesma Support Officers and medical students.

Conclusions: Conclusions detail the overall evaluated impact of the workshop across the Experts By Experience, the Blesma Support Officers and medical students. We present recommendations on how veterans with acquired loss of limb use as Experts By Experience can be centred within the medical and wider health professional curriculum and third sector staff training, and the transferability of this work across wider statutory support services. Importantly, we directly detail how empirically informed new knowledge can be implemented with meaningful impact across Experts By Experience, lay, professional, statutory, and non-statutory communities.

Poster Presentations

MIXED MENTAL AND PHYSICAL HEALTH AND WELL-BEING

Podium Presentations

1B03: Gendered risks of military sexual trauma and other forms of abuse in Canadian serving uniformed military members and Veterans as pathways to chronic pain

MacDermid, Joy C., PhD[1,2]*; Pouliopoulou, Dimitra V., PhD (Student)*[1,2]*; Walton, David M., PhD*[1]*; Kibble, Angel*[3]*; Bobos, Pavlos, PhD*[1,2]

[1]*Western University;* [2]*St. Joseph's Hospital London;* [3]*Veteran with Lived Experience*

Introduction: Previous research has found high rates of military sexual trauma and chronic pain in serving uniformed military members and Veterans. A number of studies hypothesized that military sexual trauma and chronic pain are inter-related, but there are limited studies that consider the pathways.

The purpose of this study was to assess the risk of experiencing military sexual or physical trauma based on gender, and to investigate potential pathways between harassment and trauma with severe chronic pain in Canadian serving uniformed military members and Veterans.

Methods: We performed an observational study of Canadian serving uniformed military members and Veterans living with chronic pain. Odds ratios [OR] were calculated to determine the odds of different military sexual trauma or other forms of abuse based on gender; and the association between the presence of severe chronic pain and gender. A Generalized Linear Model was used to determine the association of the different trauma exposures between women and men (expressed as risk ratios [RR] with 95% confidence intervals [CI]), measuring pain, depression, anxiety, and function outcomes while in military service. Structural Equation Modelling was used to investigate pathways between military sexual trauma and chronic pain levels.

Results: We included a total of 328 Veterans and serving uniformed military members living with chronic pain (80% Veterans, mean age: 54 years old, 37% women, average pain score on a 10-point scale: 6.8). In the multivariable model, we found an association between psychological distress and severe pain (OR = 1.30, 95% CI 1.14 to 1.47).

Being a woman while in military service was associated with a higher risk of experiencing military sexual harassment (RR = 7.78, 95% CI 4.84 to 12.50), emotional abuse (RR = 5.77, 95% CI 3.68 to 9.04), and physical abuse (RR = 1.39, 95% CI 1.17 to 1.66) when compared to men. Military sexual assault exposures did not demonstrate the same gendered risks (RR = 0.66, 95% CI 0.31 to 1.41).

Military sexual harassment and sexual assault were directly associated with psychological distress levels and indirectly associated with severe chronic pain (R2 = 0.41).

Conclusions: Women serving uniformed military members have much higher risk of experiencing military sexual harassment and emotional abuse than men. Our model suggests military sexual trauma leads to distress that is directly associated with severe chronic pain, which may partially explain why women experience higher rates of chronic pain.

1B04: Implications of Military Sexual Trauma on Occupational Performance Amongst Canadian Armed Forces Veterans

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Introduction: Despite a societal acceptance that sexual trauma results in an array of negative implications, there remains little research into the impact on Veterans of the Canadian Armed Forces (CAF). Military sexual trauma (MST) survivors are at greater risk for health challenges and difficulties with activities of daily life. This current presentation focuses on the effect of MST on daily functioning, including occupational performance, which is understood as the ability to carry out roles and/or routines and activities in response to the demands of internal and/or external environment. This presentation is a subset of a larger project seeking to better understand the impact of MST on women identifying Canadian Veterans.

Methods: The research team utilized a social constructive methodology to conduct qualitative interviews with 19 women identifying Veterans who were exposed to MST. This approach was employed to create space for participants to narrate their own experiences. The study questions centred on how MST influenced participants' experiences of the world with respect to daily functioning. Interviews were conducted via Zoom conferencing platform by an experienced, trauma-informed interviewer. Interviews were audio recorded and transcribed. All transcripts were de-identified and analyzed using the software program MAXQDA. A GBA+ lens was used in the analysis of all qualitative data.

Results: The study found that MST has ongoing implications in many aspects of participants' lives including career, due to reduced performance brought on by psychological trauma or other co-workers, and impacts on leisure and social activities. The influence of MST on occupational performance seemed to fall within two categories: struggling to function and overcoming. Many of the participants used harmful coping strategies such as drinking, excessive exercise or work, resulting in reduced occupational performance. In addition, to engage in occupations, many participants had to work through symptoms of their mental health difficulties that were often exacerbated by specific demands of their job. This contributed to the ongoing and far-reaching negative impact of these events on one's occupational performance. While there were many more examples of difficulties that resulted from MST, several participants shared stories of overcoming these difficulties and finding new ways to meaningfully engage in daily functioning.

Conclusions: This research illuminates the occupational performance challenges that participants experienced. The impact of sexual trauma is only beginning to be examined in relation to occupational performance in women identifying Veterans. Future research examining the occupational aftermath of those affected by MST would be an important contribution to the field.

2C01: Public Perceptions of Veterans and their Impact on post-service transition: Cross-National Perspectives.

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Introduction: After September 11, 2001, and particularly U.S. operations in Iraq and Afghanistan, the U.S. saw a surge in the "sea of goodwill" – millions of dollars in investments from private companies, philanthropy, and individuals into veterans and the organizations that support them. However, now that the wars are over, there may be a waning of such goodwill, raising questions about the civilian-military divide and to what extent Americans support veterans. Through a series of surveys, we analysed Americans' perceptions of veterans and the benefits and services provided to them.

Methods: The RAND American Life Panel (ALP) is nationally representative, probability-based panel of American adults. We fielded surveys to the panel in July 2021 (n= 2,017 respondents) and July 2022 (n=1,560 respondents) to examine American's perceptions of veterans.

Results: Very few American adults (3%) feel that the U.S. government is doing an excellent job of caring for its veterans (21% said it was doing a good job and 76% a fair/poor job). Most (87%) support the need to do more for veterans. American adults are more likely to support a guarantee of benefits for veterans than for all Americans. For example, 85% support a guarantee of free college for veterans, while 57% support free college for all Americans. When asked about perceptions about veterans, older respondents were more likely to think that veterans are more reliable and hard-working than the rest of society (83% of respondents age 75+ agreed with this) compared to younger respondents (55% of those age 18-24). In contrast, younger respondents were much more likely to think that it was likely that a veteran would do something violent to themselves (71% of respondents age 18-24 thought this was likely) than older respondents (20% of those age 75+). We also found differences in perceptions of veterans by respondent education, military affiliation, and race/ethnicity.

Conclusions: Americans report strong support for veterans but think that the U.S. government could be doing more to support them. At the same time, Americans have misperceptions about veterans' needs and may not understand the benefits and services veterans are already receiving. Older Americans have more positive views of veterans than younger Americans, but this may be because these groups have different conceptions of the U.S. veteran population. Understanding how perceptions of veterans are associated with public support for veterans' benefits and services could inform government and non-profit policy strategies and program development.

3C01: Listening to Canadian Veterans About Cannabis Use in the Context of Posttraumatic Stress Disorder: Preliminary Results from A National Survey

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[1]University of Ottawa; [2]Royal Ottawa Mental Health Centre; [3]Lived experience; [4]Veterans Affairs Canada; [5]Collège militaire royal du Canada; [6]Ottawa Hospital Research Institute

Introduction: Veterans with posttraumatic stress disorder (PTSD) represent one of the largest groups in Canada using cannabis for medical purposes. This project leveraged their expertise to deepen our understanding of their experiences and views linked to cannabis use.

Methods: An online bilingual survey was co-designed with veterans with lived experience to assess parameters of cannabis use and perceived effects on psychiatric symptoms, sleep , pain, cognitive complaints, alcohol/substance use.

Veterans Affairs Canada invited PTSD disability benefits recipients to participate in the survey.

Results: Between September2022 and January2023, responses were collected from 120 veterans regularly using cannabis and 52 who were not. The two groups had comparable age, sex, education, and income (p>.050). There were no significant group differences in rates of comorbid anxiety, mood or alcohol/substance use disorders, or chronic pain; in the severity of PTSD, anxiety, depression, or suicidality symptoms; nor in subjective cognitive difficulties (p>.050). Cannabis use was linked to lower symptoms of substance use disorder (p<.050). Compared to the subgroup who was not using cannabis, fewer veterans who used cannabis were taking prescription medications for sleep (20% compared to 38% in those who did not use; Chi-squared=4.7, p=.036), but veterans who used cannabis did not report poorer sleep or worse nightmares (all p>.050). Over a quarter of veterans reported stopping or reducing use of pain (49%), sleep (38%), or psychiatric (28%) medications after starting cannabis. The most frequently reported positive impacts of cannabis were improvements in anxiety (87%), physical pain (85%), mood/depression (83%), sleep quantity/quality (81-89%), irritability (80%), nightmares (79%), anger/aggressiveness (78%), and hyperarousal (63%). The most frequently reported negative impacts concerned concentration (30%), memory (27%), drowsiness (26%), motor skills (18%), speech (13%), problem solving (13%), decision-making (12%), and motivation (12%). Only 63% of respondents felt they had found the optimal cannabis dose, a process that took up to 4 years for some people.

Conclusions: Although this needs to be confirmed by larger studies designed to assess causal effects, these preliminary results suggest a generally positive perceived safety profile of medical cannabis in many veterans with PTSD. Our findings also suggest that some individuals may possibly turn to medical cannabis to reduce the use of other prescription medications without perceived worsening of symptoms. The perceived positive and negative effects of cannabis on mental/physical health and functioning varied extensively, stressing the need for personalized approach in guiding medical cannabis use. Expanding this line of work may help inform clinical guidelines and policies.

3C02: Medical diagnoses associated with authorizing cannabis for medical purposes among Canadian Veterans from 2016 to 2021.

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Introduction: Military service is associated with an increased risk of musculoskeletal injury, chronic pain, and

mental illness, including post-traumatic stress disorder (PTSD). Canadian Veterans increasingly seek authorization to use cannabis for medical purposes (CMP); however, it remains uncertain which conditions are managed with CMP. This uncertainty complicates efforts to assess whether use is evidence-based and likely to provide greater benefits than harms. We therefore explored which medical diagnoses were associated with CMP among a cohort of Canadian Veterans.

Methods: We analyzed all 91,148 CMP authorizations by Veterans Affairs Canada (VAC), corresponding to 19,122 Canadian Veterans, that occurred from 2016 to 2021. Descriptive analysis was used to establish the most frequent medical diagnoses (using ICD-10 codes) associated with CMP. We excluded tinnitus and hearing loss, for which there is no indication of cannabis use. We used association rule mining analysis, applying the Apriori algorithm with minimum support of 0.1% and minimum confidence of 75%, to examine frequent combinations of diagnoses. The counts of authorizations per client were assessed, and the incidence rate ratios (IRR) of diagnosis and CMP characteristics were explored using a negative binomial model.

Results: Multiple conditions were listed in the authorization forms, and a primary diagnosis was not indicated. The most common diagnoses were: PTSD (49%), chronic pain (43%), Depressive disorder (11%), Anxiety disorder (10%), insomnia (5%), Adjustment disorder (1%), compartment syndrome (0.5%), and soft tissue hip injuries (0.4%). There were an average of four diagnoses listed per Veteran, and the most common combination was PTSD and chronic pain. Univariate regression analyses showed that Veterans were 1.8 times more likely to receive authorization for > 3 grams/day vs. < 3 grams/day, despite a VAC policy change in November 2016 to limit maximum quantities to 3g/day. Moreover, Veterans were more likely to receive authorization for dried cannabis products compared to other types (IRR 1.23), and more likely to receive authorization if they reported a diagnosis of PTSD vs. other conditions (IRR 1.59).

Conclusions: PTSD and chronic pain were the most frequent diagnoses associated with authorizations for CMP among Canadian Veterans. Most authorizations exceed 3g/day despite VAC policy to stay below this amount, and dried cannabis remains the most common formulation authorized despite increased risks of pulmonary harms vs. non-inhaled formulations. Given the predominant use of CMP for PTSD and chronic pain, clinical trials are urgently needed to establish the benefits and harms of cannabis for these indications – both alone and in combination.

3C03: Longitudinal Perspectives on the Utilization of Cannabis for Medical Purposes in Canadian Veterans: A Population-Based Repeated Cross-Sectional Study

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Introduction: Posttraumatic stress disorder (PTSD) affects over 70% of all individuals receiving disability benefits from Veterans Affairs Canada (VAC) for a mental health condition. Many Veterans with PTSD turn to cannabis to alleviate their symptoms. However, there are mixed findings about the effectiveness and safety of cannabis for PTSD, suggesting a need to utilize existing data to identify patterns of cannabis use. This study aimed to describe and compare the sociodemographic and clinical profiles of cannabis use in Veterans with and without PTSD.

Methods: We conducted a population-based repeated cross-sectional study linking cannabis for medical purposes (CMP) Recipients and VAC administrative databases in all Veterans in Canada eligible for cannabis for medical purposes (CMP) reimbursements between 2014 and 2020. Descriptive statistics were used to characterize demographic, social, clinical, and service-related determinants by CMP and PTSD status. Among those who received CMP reimbursements, we described CMP history over time by PTSD status, age, and sex.

Results: 116,815 individuals eligible for CMP reimbursement were included. Among those, 10,228 (8.8%) were CMP recipients, and 17,335 (14.8%) had PTSD. Regardless of PTSD status, CMP recipients counted a significantly higher proportion of individuals who were younger (Chi-squared>92.2, p<.001), deployed to Afghanistan or other special duty areas (Chi-squared>21.5, p<.001), deemed to be "totally and permanently incapacitated" (Chi-squared>1,119.9, p<.001), and lived in rural areas (Chi-squared>25.5, p<.001). These differences were more pronounced in the subgroup with PTSD. Furthermore, among CMP recipients, those with PTSD were more likely to have a daily dosage of CMP > 3 grams: 24.9% of CMP recipients with PTSD vs. 9.5% of CMP recipients without PTSD. Individuals with PTSD who were not CMP recipients were more likely to be on opioids/narcotics, antidepressants, benzodiazepines, and antipsychotic medications. Since 2014,

medical cannabis authorizations have continued to increase. For both sexes, the number of medical authorizations was higher for the 40-59 years than the < 40 or 60+ years age category and was especially pronounced for males with PTSD in the 40-59 age category compared to other groups with the steeper increase over time.

Conclusions: This study suggests that the sociodemographic profile of cannabis use is similar in Veterans regardless of PTSD status. However, veterans with PTSD used higher dosages of cannabis than veterans without PTSD. Overall, cannabis use was linked to lower use of medications typically prescribed for mental health, pain, and sleep problems. These findings could help inform VAC medical cannabis policy and future research on medical cannabis.

3E04: "It's not an outstretched hand, it's an accusatory stare": Understanding veterans' experiences of the United Kingdom social security benefits system

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Introduction: There has been an increasing focus in the UK on supporting veterans, with the Armed Forces Covenant (2011), the Strategy for our Veterans (2018) and the creation of the Office for Veterans' Affairs (2019). At the same time, there has been a parallel period of unprecedented UK welfare reform, with significant (and sometimes punitive) changes to the social security benefits system. However, research focused on veterans' experiences of claiming benefits has been largely absent, despite routine interactions with this system. Responding to this significant knowledge gap, since 2017 the authors have been leading a project funded by the Forces in Mind Trust (FiMT) called *Sanctions, Support and Service Leavers*. The aim of the project is to provide an understanding of how veterans' experience navigating various aspects of claiming benefits e.g., application processes, health assessments for benefits, conditionality, and interactions with UK Jobcentres. The project completes in autumn 2023 and has produced six outputs to date.

Methods: The project involves qualitative longitudinal research (QLR) with veterans undertaken at approximately 9-12-month intervals since 2017. To date, the project has included 108 veterans (from a range of backgrounds and geographical areas), conducting 251 interviews across various timepoints. QLR enables a move away from a 'snapshot' of circumstances, to explore experiences over time, which is particularly valuable for understanding the impacts of policy and practice changes. QLR generates rich data sets and we have used framework analysis to explore the data, combining both cross-sectional and longitudinal analysis.

Results: The project has brought to light the difficulties experienced by veterans in their interactions with the benefits system. More specifically, our analysis has highlighted the following key issues (i) interactions with benefits processes and staff that were trauma blind; (ii) significant inconsistency (both geographical but also within individual Jobcentres) in the support provided to veterans; and (iii) the impact of benefits stigma on veterans.

Conclusions: This project is the only one of its kind within the UK and therefore represents a focal point for policy and practice in relation to veterans and the benefits system. The findings to date have been used by the Department for Work Pensions (the UK government department responsible for benefits) to improve its support for veterans. This includes introducing new Armed Forces Leads within the staff base, adding an Armed Forces marker to the benefits system to enable signposting to appropriate support, and exploring the integration of trauma informed approaches.

4A01: The Vietnam Health and Aging Study: Qualitative Exploration of Resilience(y)

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Introduction: War and conflict affect many millions, yet scant research investigates the long-term impacts of wartime trauma on health and aging within communities directly affected. In this study, wartime trauma is defined as exposure to experiences such as bombing, death and injury to self and family, witnessing the deaths of others, and displacement. Existing literature suggests that first-hand exposure to these types of occurrences is an overlooked determinant of health and quality of life in old age. How later-life stressors and/or supportive influences shape war's long-term biological impact is virtually unstudied. This represents an oversight given that war punctuates the life course of many moving into older ages, with numbers increasing. The research reported in this paper is the qualitative component of a unique, mixed-method data collection effort, the Vietnam Health and Aging Study (VHAS), led by a global, multidisciplinary team. The purpose of the qualitative component was to explore the mechanisms that link wartime trauma to health outcomes. Secondary aims include validating exposure and health outcome measures collected through the quantitative component of the study.

Methods: Using information collected from respondents in Wave 1 of the VHAS, we selected a subsample of forty participants, male and female, with high wartime exposure, and characteristics of social support and late-life stressors, to represent the broadest possible intervening mechanisms. Semi-structured interviews were taped and transcribed. Transcripts were imported into MAXQDA software and

analyzed using open, axial, and selective coding.

Results: Findings focus on experiences through the Vietnam War, related meanings, and the mechanisms linking war exposure and health. Psychosocial, demographic, and biological traits associated with resiliency were revealed as well as the role of social support in buffering associations between earlier-life wartime trauma and biological aging. Moreover, sex and/or gender variations were explored.

Conclusions: Vietnam, home to one of the single largest populations of wartime survivors in the world, provides a time-sensitive opportunity to study war exposure as a determinant of health outcomes. The results of this qualitative study assess the mechanisms linking early-life war exposure and related trauma among military personnel and civilians, men and women, living in Vietnam, with later-life biological health and aging. Our strategy for knowledge translation and capacity building moves beyond dissemination through standard academic channels and will endeavor to reach out to the Vietnamese community in Canada and Vietnam as well as to other refugee communities.

4E03: Understanding the experiences of Canadian Armed Forces Veterans participating in aquatic exercise for lower extremity musculoskeletal pain

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Introduction: Canadian Armed Forces Veterans report living with chronic pain at a rate that is nearly double that of comparable Canadians. Military Veterans have unique pain management needs and further research is urgently needed to address the complex pain management needs of Canadian Armed Forces Veterans living with pain. Aquatic exercise is a treatment option that may improve outcomes in Canadian Armed Forces Veterans living with pain. Therefore, the aim of this study was to understand the lived experiences of Canadian Armed Forces Veterans living with pain who incorporated aquatic exercise as part of their pain management process, providing insight into the use of aquatic exercise for pain management among military Veterans.

Methods: Informed by interpretive phenomenological analysis, ten Canadian Armed Forces Veterans who live with chronic pain and had engaged in an aquatic exercise rehabilitation program were interviewed. Semi-structured, one-on-one interviews with participants explored their pain and how it impacts them, their rehabilitation program, and specifically their experience engaging in aquatic exercise. This approach was used to focus on the personal meanings that participants attributed to engaging in aquatic exercise.

Results: Three superordinate themes emerged: respite from

the pain; reconstruction of the tactical athlete identity; and reclamation of a sense of self and seeing a new path forward. Sub-themes identified under the respite from the pain theme included a respite from the pain during the aquatic exercise session, a lasting respite from the pain for a period of a few days, and a respite from the mental burden of living with pain. Sub-themes identified under the reconstruction of the tactical athlete identity included the ability to exercise and push themselves to their limits, and reconnecting with their identity. Finally, sub-themes identified under the reclamation of a sense of self and seeing a new path forward theme included reclaiming a sense of self, seeing and feeling improvements, and providing hope for what life could be like in the future.

Conclusions: Exercise has the potential to improve pain, function, and quality of life for individuals living with pain. For Canadian Armed Forces Veterans living with pain, engaging in aquatic exercise can be an integral part of recovery by facilitating a respite from the pain, increasing the ability to be physically active, and fostering a new sense of self and hope for the future.

4E04: Military Identity in Ill and Injured Canadian Armed Forces Personnel and Veterans: An Examination of Soldier On Participants

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Introduction: The reality and hardships associated with military life increase members' risk of experiencing various mental and physical health conditions. The Canadian Armed Forces supports several key casualty support programs and services as part of their commitment to providing care to ill/injured military personnel. One such critical initiative is the Soldier On program, which supports both actively serving military personnel and Veterans in overcoming their physical and/or mental health injuries through the promotion of physical activity and sport. This presentation builds on a central underlying theme found in previous qualitative studies conducted on Soldier On which found military identity and regard for service was significant to participants' health and well-being, and to their experiences within the program.

Methods: A survey was administered to past and present Soldier On participants (n=1161), representing the third phase of a multi-year mixed methods research study on the program. In addition to a series of items pertaining to event and activity involvement, respondents completed self-report measures of mental and physical health, access to social support, sense of belonging, and a modified military identity scale. A two-dimensional orthogonal factor analysis was conducted on the military identity scale for a sub-set

of respondents (n=839), first on the whole sample, then separated by gender.

Results: Although men and women were indistinguishable on their scores for most identity measures, some differences were noted. In particular, men reported stronger identity commitment and higher positive feelings about their military service than women. The items clustered into three factors which aligned with dimensions of identity commitment as well as public and private regard for military service (both positively and negatively-oriented). Based on further analysis, no evidence of gender non-invariance in the measurement of military identity was found; the clustering and model fit appears comparable for women and men.

Conclusions: These preliminary findings support a conceptualization of military identity as a multidimensional construct for ill and injured participants. The results from this study will enable a participant profile to be developed that will help Soldier On to not only better understand the demographic make-up of its program users, but also to examine the relationship between dimensions of military identity and the mental and physical health of participants. This research will help guide the program in designing more targeted activities and events to better support the needs and requirements of ill and injured service members and Veterans, including fostering and building military identity and connection.

5A04: Military Veterans Wellness Program

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Brief Description: In 2018, 4.4% of 32,005 people experiencing homelessness in unsheltered areas, shelters, or a transitional facility identified as Veterans of the Canadian Armed Forces (CAF). In addition to homelessness, suicide surveillance and research is a priority for Veterans Affairs Canada (VAC), as risk of poor mental health and suicide for veterans is higher compared to the general population. There are many services and benefits available to veterans through VAC and other organizations, but the wait times to receive them are often lengthy. The Military Veterans Wellness Program (MVWP) was created in 2019 by two law enforcement officers who are also veterans of the CAF.

Patient Population: It is a partnership between the Toronto Police Service - Community Partnership & Engagement Unit (CPEU), and The Royal Canadian Mounted Police (RCMP), Department of National Defence (DND), Canadian Armed Forces (CAF), Veterans Affairs Canada (VAC), Operational Stress Injury Social Support (OSISS), and The Royal Canadian Legion (RCL). The MVWP program mission is to improve the well-being of veterans by providing law enforcement agencies with a better understanding of veterans, de-escalation training, and a streamlined referral process to national support services. Law enforcement officers now have the capacity to refer a veteran to VAC, RCL, and OSISS if they require assistance and consent to receiving help; an unprecedented level of cooperation between law enforcement and national veteran social service agencies.

Results: A performance measurement framework (PMF) was developed for the program using the Director General Military Personnel Research and Analysis PMF development process. Specifically, a strategic framework, logic model, and key performance indicators were developed to enable the assessment of program effectiveness. There are five key functional areas of the program: education and training, referral, policy and planning, collaboration, and national implementation and communications. The desired ultimate outcomes of the program are a decrease in veteran homelessness and suicide, dignity and prosperity for all CAF veterans, and increased public safety for all communities across Canada.

Conclusions: Since its launch in September of 2022, the MVWP is currently being implemented in 35 law enforcement agencies across Canada and has assisted over 80 veterans in crisis. The MVWP has received attention from various news outlets (e.g., Global News National) and support from the Premier of Ontario. Future research related to the program with the University of Toronto and Sunnybrook hospital is discussed.

5B01: The role of changing gender and sexual expression to how service women navigate life in the Canadian Armed Forces

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[1]McMaster University

Introduction: Military Sexual Trauma (MST) refer to any type of sexual assault or harassment experienced while serving in the military and associated with increased rates of depression, substance use, and post-traumatic stress disorder. Although it is well known that sexual trauma increases risk for a host of negative sequelae in other populations, there is a dearth of evidence surrounding how MST affects Canadian military Veterans. Here, as a part of a larger study aimed at understanding experiences of sexual misconduct during Canadian military service, we identified that changes in gender and sexual identity and expression may play a role in how women in navigate military service and their status as Veterans, particularly as these changes related to lives experiences of MST.

Methods: A multi-method study approach was taken that included 1:1 interviews and administration of questionnaires collected prior to the interviews. One-hour interviews were conducted via telephone or Zoom video-conferencing platform with participants from across Canada. Interviews were semi-structured and followed an interview guide. Qualitative content analysis was implemented using an inductive, interpretive phenomenological approach, whereby a thematic framework was developed out of a standardized coding scheme derived from the raw data, allowing for exploration of how participants understood their lived experiences.

Results: A total of 19 women participated in the study, representing many branches of the Canadian Armed Forces with ages ranging from 30 to 74 (median age group was 47-54) and residing in a variety of provinces (Alberta, British Columbia, Newfoundland, Ontario, and Saskatchewan). A few participants self-identified as a visible minority (i.e., Metis, Person of Colour). Almost all participants identified as white females (90%) and the majority identified as straight and cisgender women while a few self-identified as bisexual, lesbian, and asexual. Our analysis identified multiple intersecting themes around how women related to their gender and sexuality because of experiences of sexual misconduct and sexual trauma. Many participants used gender expression or sexual behaviour to cope with their experiences and attempt to control aspects of their lives after experiencing sexual misconduct in the military.

Conclusions: The findings presented here begin to address knowledge gaps in how gender expression and sexual behaviours are impacted by incidents of military sexual trauma and their associated use as a coping strategy. The findings contribute to the growing body of work understanding the experiences of people who are minorities within the military.

5C04: Quantifying the prevalence of post-traumatic stress disorder following traumatic blunt or penetrating trauma to the torso area

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Introduction: Military personnel on the front lines are susceptible to blunt or penetrating injuries requiring advanced medical management techniques. These injuries are strongly associated with developing mental health disorders. Epidemiological data confirm that patients with traumatic brain injuries (TBI) are twice as likely to develop post-traumatic stress disorder (PTSD) than those without. Though the effects of TBI on PTSD are well established, the effects of non-compressible torso hemorrhage (NCTH) alone without significant injury to the brain have not yet been delineated. We hypothesize that patients requiring hospitalization and treatment for non-compressible torso hemorrhage, as in hemorrhagic injuries in the thorax or abdomen, may develop PTSD, a major depressive episode/disorder (MDD), or a generalized anxiety disorder (GAD) post-injury. Additionally, we seek to determine whether NCTH associated with surgical interventions and longer lengths of stay is more likely to develop a mental health disorder in military and civilian settings.

Methods: This is a retrospective database/chart review in the years spanning from 2000-2022 pending appropriate institutional clinical research ethics board approval. Linking the Canadian Forces Casualty Registry with the Joint Theatre Trauma Registry and the Military Health Records, we will identify military personnel with NCTH injuries from blunt or penetrating trauma and assess the development of PTSD, MDD, or GAD, per the DSM-V criteria. As PTSD symptoms usually begin within 3 months of traumatic events, we will screen charts for PTSD, MDD, or GAD up to 6 months after injury. Additionally, a chart review of civilian trauma patients admitted to St. Michael's Hospital (SMH) trauma service who had an NCTH will be completed.

Results: The expected primary outcome of this study is to define the prevalence of PTSD, MDD, or GAD after NCTH. Secondary outcomes include assessing mental health status after NCTH between military and civilian cases and between blunt and penetrating means of injury. A descriptive study analysis to identify baseline characteristics, injury characteristics, and key lab values will be performed. Data will be assessed for normality, outliers, and co-linearity. Differences between groups will be calculated based on the chi-square or Fisher's exact test for dichotomic variables and on the Mann-Whitney U test for continuous variables.

Conclusions: This work identifies the onset of psychiatric illnesses secondary to NCTH, enabling an understanding of how biological, psychological, and social functioning interact in patients with NCTH injury. This study's findings will allow individuals, organizations, and communities to manage life after NCTH injury and mitigate potential mental health disorders.

6A01: Employment and mental health during the initial period of the COVID-19 pandemic among United Kingdom ex-service personnel

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Introduction: The COVID-19 pandemic has interrupted

participation in the labour force and may have affected mental health, both through direct effects of illness and isolation, and indirectly due to negative effects on employment. In the UK, employees were supported with furlough pay, which may reduce the mental health impact of the pandemic. Former military personnel may be at particular risk due to both additional exposure to risk factors of poor mental health and barriers to labour market participation raised by transition from military to civilian working environments. This article aims to examine furlough and unemployment as a result of the COVID-19 pandemic in UK working-age ex-Service personnel, and associations with poor mental health.

Methods: Participants from an existing cohort study of Iraq/Afghanistan era UK Armed Forces personnel were invited to take part (1,562 responded of 3,547 contacted, a response rate of 44%). They provided self-report information on their employment prior to the COVID-19 pandemic and how this had changed since the pandemic. Mental health was measured using the General Health Questionnaire and compared with data collected prior to the COVID-19 pandemic. Associations were determined using logistic regression with odds ratios (OR) and 95% confidence intervals (CI) being presented.

Results: While veteran unemployment is not higher than civilian unemployment (4.7% and 4.8% respectively at September 2020), it had risen during the pandemic from 1.3%. Part-time and self-employed veterans were more likely than full-time employed veterans to experience furlough (being paid a proportion of wages while unable to work) (OR 2.78 95% CI 1.70-4.57 for part-time, OR 2.88 95% CI 1.82-4.55 for self-employed) or unemployment (OR 3.47 95% CI 1.43-8.41 for part-time, OR 5.55 95% CI 2.70-11.40 for self-employed). Furlough, job reduction or job loss were associated with onset of mental ill health (adjusted OR 1.85 95% CI 1.22-2.81 for furlough and reduced wage, adjusted OR 4.06 95% CI 1.94-8.50 for those who became unemployed).

Conclusions: Employment of ex-Service personnel has been more negatively affected by the COVID-19 pandemic than the general population, possibly because ex-Service personnel are mostly male, and men have been more affected in the UK general population. Employment instability has negative consequences on mental health which are not mitigated by furlough.

6B01: Sex-disaggregated analysis of relationships between rank at release and health outcomes in veterans of the Canadian Armed Forces

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Introduction: Military rank influences an individual's work tasks and experiences, and may also relate to their broader social environment and experiences in daily life. However, little research to date has focused on the relationships between military rank and chronic health outcomes in military populations. This study aimed to examine relationships between military rank at release and various health indicators in veterans, using a sex-disaggregated approach.

Methods: Data were obtained from the 2019 Life After Service Survey, a national study of Canadian Veterans released from Regular Force service between 1998 and 2018. The analytic sample included 2118 male and 288 female veterans. Individual logistic regression models calculated odds ratios by rank category and various mental, physical, and perceived health variables, for males and females separately. Confidence Intervals (CIs) were calculated at the 95% level.

Results: For all significant associations observed between rank and health indicators, Junior or Senior NCM rank at release was associated with poorer outcomes compared to Officers, for both males and females. Junior NCM veterans fared most poorly for perceived physical health (males and females); urinary incontinence, perceived mental health "fair" or "poor", anxiety (females only); and asthma, chronic obstructive pulmonary disease, back problems, stomach ulcer, diabetes, migraine, hearing problems, mood disorder, PTSD, and suicidal ideation (males only). Senior NCMs fared most poorly for arthritis (both males and females); chronic pain, perceived mental health, and anxiety (males only), and hearing problems and PTSD (females only).

Conclusions: This study highlights the importance of rank and sex in Veteran research. Our results provide new information to identify groups at greater risk of negative health outcomes, which can assist development of targeted, sex specific military health promotion activities and veteran outreach and service delivery.

6B02: Using Sex and Gender Based Analysis Plus and Intersectional Research to Identify the Health and Well-being Needs of Equity Deserving Veterans in Canada

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Introduction: Military populations are becoming increasingly diverse. Yet little is understood about the unique impacts military service has on the experiences and well-being outcomes of equity-deserving Veterans such as women, 2SLGBTQI+, Indigenous, racialized, and Veterans with disabilities. A Sex and Gender Based Analysis Plus (SGBA+) and intersectional research approach offers a unique

framework for engaging with Veterans to analyze issues of diversity and inequity, and challenges the traditional focus on historic assumed cis male Veteran norms. Investigating how sex, gender, race, sexual orientation, health status, etc. interact with military characteristics such as rank, years of service, deployment experiences, etc., enables generation of new and arguably more accurate information about the issues arising for equity-deserving Veterans, thus facilitating a move from a traditional 'one-size fits all' approach towards equitable supports for all Veterans. This study aims to explore and identify unique health and well-being priorities in partnership with equity-deserving Veterans; inform services, programs and policies; and support the allocation of resources for all Veterans.

Methods: This study uses a sequential mixed-methods research design that includes an online survey, followed by focus groups and one-on-one interviews with Canadian Veterans, with an emphasis on engaging women, 2SLGBTQI+, Indigenous, racialized, and Veterans with disabilities. To ensure inclusion of equity-deserving Veteran groups, recruitment will involve identification and collaboration with key Veteran and community stakeholders to generate awareness of the study, and provide opportunities to participate meaningfully in data collection activities. The survey will use a non-probability convenience sampling methodology, and focus groups and interviews will employ snowball sampling. Survey data will be disaggregated to identify differences and disparities between and within Veteran groups, and will guide development of focus group and interview questions that further investigate the nuanced lived experiences and well-being needs of equity-deserving Veterans.

Results: The findings for this study are pending and will be used to address the gaps in research on equity-deserving Veterans' health and well-being needs. A significant feature of this study will be the re-engagement of study participants in the validation of results and prioritization of their own health and well-being needs for the development of recommendations and actions moving forward.

Conclusions: Using a SGBA+ and intersectional research approach is an effective way to explore the relationships between factors that create differences in equity deserving Veterans lived experiences, identify their unique health and well-being needs, and can contribute to promoting meaningful engagement and knowledge exchange with all Veteran groups.

6B04: Assessing the Needs of Women Who Served in the United States Armed Forces

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[1]The University of Alabama; [2]RAND Corporation; [3]Combined Arms Institute; [4]The University of Southern Mississippi; [5]Southern Illinois University; [6]Retired; [7]Syracuse University; [8]Independent Consultant; [9]Deceased

Introduction: The unique experiences of women in the U.S. military must be contextualized by the timeline for full integration of women into military service. Women have served in the U.S. military since the founding of the U.S.; however, their service was neither fully accepted or recognized. The *Assessing the Needs of Women Who Served in the U.S. Armed Forces* survey is the first of a series of studies intended to better understand the well-being and support needs of women veterans across many domains. We present the overall findings, and variation in responses by key demographic and military background variables (e.g., race/ethnicity, disability status, military service era, etc.). Data will help improve support services for this important population and to develop policy recommendations to improve the well-being of women who have served in the military, both in the U.S. and internationally.

Methods: We utilize a sequential mixed-methods, exploratory study (Quantitative-> Qualitative-> Quantitative) within a community-based participatory framework. The first is a national purposive, web-based survey. The survey was administered using a modified snowball sampling methodology and was distributed using Qualtrics survey software; it opened January 11, 2021 and closed July 31, 2021.

Eligible individuals were U.S. women veterans over 18 years old. Nearly 6,000 individuals opened the survey link; 4,707 respondents competed the survey approximately . Respondents resided in every state in the U.S. and served in every branch of service. Quantitative analyses employed descriptive statistics and multivariate logistic modeling. Qualitative responses were analyzed using inductive qualitative content analysis (QCA) as the theoretical methodology to examine content and semantic relationships using codes and categories.

Results: Approximately half of the respondents reported being isolated, feeling unsupported and unhealthy, lacked a sense of purpose, and did not find their role in community and family to be a source source of self-worth and connection to others. Most women in this survey felt their transition was difficult and that they needed more time to figure out civilian life. Overwhelmingly, respondents reported they desired women-specific support services to address these needs.

Conclusions: Women veterans need tailored support services that recognize their unique experiences both in the military and once they transition back to civilian life. These services have to be provided in spaces/contexts where they feel safe and valued. Extensive research is still need to better understand how to assist women who served be well.

7B04: International perspective on military exposure data sources, applications, and opportunities for collaboration

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Brief Description: Military personnel may be exposed to a range of hazards during their service. The assessment, documentation and reporting of military exposure information can be used to guide health protection, program services, and research to support serving members and veterans. In 2021, a Working Group of researchers from veteran and defence administrations across the Five Eyes countries (Australia, Canada, New Zealand, the United Kingdom, and the United States) was established to explore opportunities for research collaboration, and exchange knowledge on military exposures across administrations and countries.

Patient Population: The Working Group's first task was to examine large military exposure data sources available in each country, their applications, and opportunities to leverage information across administrations and internationally. "Exposure data" was broadly defined, ranging from hygiene exposure measurements to proxies such as military occupation and deployment history. A list of characteristics (e.g., type/scope of data, data holder, purpose of data collection, identifiable sub-populations) was developed to promote consistency in data source reporting across countries. Findings were collated and descriptively summarized.

Results: Across the five nations, 57 military exposure data sources were identified and summarized. Military population surveys and administrative databases were the most common types of data reported; others included hygiene databases and hybrid (i.e., self-reported information and other). Survey data typically included self-reported exposures by active military members and/or Veterans while administrative data included medical records, compensation, and personnel records. Coverage varied with respect to capturing currently serving military personnel only, Veterans only, or a combination. The majority of exposure data holders were defense administrations; others included Veteran administrations, other government entities, and universities. Identifiable subpopulations included particular operations (e.g., Gulf War, Vietnam), military environments or occupations (e.g., personnel posted on submarines), and service periods (e.g., service within a specified period or released since a certain date). Examples identified by the Working Group highlighted the value of linking military exposure information to other data sources, often through external collaboration. Challenges and opportunities to the collection and use of these data sources was also summarized.

Conclusions: This work provides a baseline summary of military exposure data sources across five countries. Across nations, commonalities and differences across jurisdictions provides opportunity to learn from one other and leverage information and experience in this evolving area of exposure science. There is a clear need for ongoing data collection to inform research and health protection and promotion activities in military and veteran populations.

7D01: An Empirically-Based Screener: Veteran-Transition Assessment Tool

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Introduction: The purpose of this effort was to develop a comprehensive, veteran-transition assessment tool (V-TAT). This tool measures veterans' risks and will guide veteran-serving providers through the use of empirical data to inform their investment decisions toward the most effective program and service components in support of veterans' and their families' well-being. The V-TAT was developed based on empirical evidence 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 V-TAT is designed to determine veterans' specific risk factors linked to poor well-being outcomes and to match veterans' needs to the type of program components most likely to result in positive well-being outcomes. Results

from the V-TAT are then reported to inform veteran-serving providers about the level of support and the specific type of effective program components needed by their veteran clients. A total of 30 veterans have participated and we will conclude the pilot soon with 50 veterans participating.

Methods: There are seven sections: background information, specific experiences, and five well-being domains. Given the focus of their organizations, providers are able to select the sections given to their clients, although the background information and specific experiences sections are highly recommended as they were found to be very predictive of robust risk factors for success across all well-being domains. To reduce burden, the items have been minimized to the most essential, and display logic is used to ensure that clients are only given items that apply to them.

Results: The development of the V-TAT applies research results in two dimensions to support at-risk veterans:risk factors linked to poor well-being outcomes in each of the four domains of well-being (i.e., vocation [employment and education], health [physical and mental], finances [includes legal and housing], and social relationships), and specific program component needs (e.g., program content and process [delivery mechanisms], barrier-reduction strategies used, and sustainability techniques).

Conclusions: The V-TAT pilot is nearing its end. We have collaborated with service providers who address at least one to multiple well-being domains. The pilot's purpose is to identify areas for improvement in terms of the tool's items, structure, and reporting. Upon completion of the pilot, future directions for the V-TAT include translation into a learning management system (LMS) with an automatically generated reports for service providers. This would be followed by scale-up with a wide dissemination of the tool for implementation.

7D03: Exploring the Lived Experience of 'Military Migrants': A Qualitative Study on the Military-to-Civilian Transition of Foreign & Commonwealth Veterans from the United Kingdom Armed Forces

Bryan, Ed, PhD[1]; Slapakova, Linda, PhD[1]

[1]*RAND Europe*

Introduction: The UK Armed Forces recruit personnel in significant numbers from overseas, particularly from communities across the British Commonwealth. These communities have distinct experiences of Service due to their varied socio-cultural, linguistic, and demographic characteristics. Their transition to civilian life is equally shaped by issues emerging from these characteristics, such as a need to navigate immigration law and nationality-related restrictions on employment. These issues can present various barriers to making a successful transition to civilian life and impair the well-being of veterans and their families. To date, however, little empirical research exists on the experiences of Service life and military-to-civilian transition among this sizeable population.

Methods: The findings are derived from a qualitative study following a hermeneutic phenomenology approach. Data was collected through in-depth, semi-structured interviews with 13 former-Service personnel of the UK Armed Forces with different non-UK nationalities, namely: Canada, New Zealand, Fiji, Australia, Ghana, Zimbabwe, Jamaica, Ireland, Hong Kong, and Malta. All participants identified as male. Ten participants were veterans of the British Army, two were from the Royal Navy, and one was from the Royal Air Force. Interview data was analysed through a reflexive Thematic Analysis approach.

Results: While data analysis is ongoing, five preliminary themes have been identified: 1) leaving the military corresponds to a multitude of transitions, including change of immigration status and potential resettlement from the UK; 2) transition involves a reflection on one's relationship to the UK and home country, both at the individual and the family level; 3) transition involves finding a support network, or negotiating the lack thereof; 4) transition involves reflection on one's military identity in relation to the practical consequences and symbolic meaning of policies governing the post-Service lives of 'military migrants'; 5) support before, during, and after resettlement does not reflect the unique circumstances of transition for Foreign and Commonwealth veterans.

Conclusions: Foreign and Commonwealth veterans have distinct experiences of military-to-civilian transition which involve the negotiation of military and national identity, reappraising one's relationship with government and socio-cultural institutions, and pursuing a sense of social connectedness. There is therefore a need to contextualise veterans' experiences of transition within the historic legacies of recruitment as well as the interactions between different phenomena including transition, migration, and socio-cultural integration.

7D04: The Lived Experience of Military-to-Civilian Transition and Post-Service Life amongst Gurkha Veterans

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[1]*RAND Europe*

Introduction: The recruitment of indigenous and overseas persons for military service has a long-established history and continues to be practiced Armed Forces across the British Commonwealth. A prominent example of this

practice is the enrolment of Nepali citizens into the British Army's Brigade of Gurkhas. Widely revered for the performance of its 4000 serving Nepali personnel, the Brigade has nevertheless recently been subject to criticism due to concerns surrounding inadequate remuneration and post-Service assistance. Despite this public scrutiny, however, there is currently limited evidence on the support needs of Nepali Gurkha personnel following their departure from military service. Drawing on primary data, our research addresses this evidential gap by examining how Gurkha veterans experience military-to-civilian transition and post-Service life.

Methods: The research design is based on the principles of hermeneutic phenomenology and seeks to uncover how the lived experience of Gurkha veterans is influenced, structured, and sustained by the contexts in which they operate. 16 former members of the Brigade of Gurkhas were interviewed, with the interview protocol following a semi-structured format. All the interviewees identified as male, had Nepali citizenship, and were living in the UK at the time of the interview. Data analysis was conducted using an inductive thematic approach as outlined by Braun and Clarke (2006).

Results: Data analysis is ongoing. Preliminary findings reveal that the participants have encountered multiple of challenges relating to their physical, mental, and financial wellbeing that stem from the Gurkha's unique status in the British Army. Notably, many appear to experience a profound sense of cultural disorientation upon settling in the UK owing to their Nepali heritage and the highly structured nature of their military Service. This sense of uncertainty and isolation was often identified as being compounded by the possession of insufficient English language skills – a factor which was also regarded as presenting a key barrier to accessing medical and financial services as well as contesting perceived injustices such as inadequate military pensions. The study's early findings also reveal the significance of social resilience amongst this cohort, with many adopting informal community-based help seeking behaviours.

Conclusions: The study's emerging findings show that Gurkha veterans face a unique array of health, cultural, and financial challenges in addition to those routinely associated with military-to-civilian transition and post-Service life. They highlight the need for further research into the experiences minority group veterans as well as the enduring legacies of colonial military recruitment practices.

7D05: Military to Civilian Transition and Civil-Military Relations: Cultural Divergence Crisis

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Introduction: Military to Civilian Transition and Civil-Military Relations are suffering from a crisis of cultural divergence. Western civil societies have transitioned from collective responsibility based liberal value systems, which saw civic-militarism as a virtue, to rights based and therapeutic value systems, which contest the notion of service before self. Militaries have resisted this transition. Increasingly military and civilian cultures clash for the veteran transitioning to civil society, where they are pressured into identifying as either "wounded warrior" or "hero," which impedes their re-establishment by denying the veteran self-worth through self-reliance in their civil identity (Martin 2022, Ferguson, 2013, 2011, Watson 2022). Concurrently, civil-military relations have become strained due to political polarization and disintegration of internal military culture. Theories of civic-military relations which privilege civilian decision makers "right to be wrong" (Feaver, 2003, Huntington, 1957 / 1996) and ignore increased cultural divergence are insufficient (Freedman, 2022). Civil-military cultures need re-examination before *The Fighting Spirit* can be completed.

Methods: Literature Review

Expected Results: Veterans historically suffered from the "intangible obstacles to transition" - "restlessness," "cultural dissonance," and "search for purpose" (Morton and Wright, 1987, Granatstein, 1998, English and Dale-McGrath, 2013, Belanger, 2012). Cultural difference was experienced even by homogeneous veteran cohorts returning to homogeneous communities supportive of the conflicts. The most successful solutions were programs that engendered self-reliance and self-worth through education and employment and avoided dependency. Society encouraged an explicitly gendered mid-century liberal value system that returned the "man" to self-worth through his "duty" as "provider" and re-establishment to career, home, and community. (Neary, 2011, Morton, 2004, Watson 2022). These self-worth through responsibility based solutions were forgotten in Canada's experience in the long peace after Korea and became contested by cultural change after the 1960's and increased demographic diversity. Concepts of duty, obligation, and nation were eclipsed by individualistic rights and identity based conceptions of self. Instead of being defined by societal expectations, it was required to identify one's self. (Martin 2022, Ferguson, 2013, 2011, Huntington, 1996, Chua, 2007, Hanson, 2001, Landes 1998). This modern "Therapeutic Culture" forces veterans

to select either a "Wounded Warrior" or "Hero" identity that diminishes sense of self and impedes success of self-worth solutions (Martin, 2022). Concurrently, cultural divergence, behavioural issues, and contested views of national interest, undermine the necessary trust and shared culture of civil-military leadership leading to insubordination, decreased enlistment, and retention.

Conclusions: Both military and civilian cultures need to be re-examined to achieve an effective democratic citizen-soldiery.

7E01: Understanding the needs and trajectories of older Veterans and their families in Canada

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Introduction: With the demographics of aging Veterans changing, there is a growing body of evidence to suggest a gap in health services to support older Veterans and their families. Gaining a deeper understanding of the trajectories and transitions of older Veterans (e.g., home care to long-term care), as well as the impact of different biopsychosocial factors (e.g., social support, diseases/comorbidities, physical function), would provide a more comprehensive understanding of the journey lived by older Canadian Veterans and their families. This knowledge could pave the way for the creation of tailored programs and policies that better address the specific needs of older Veterans and their families. The objectives of this study were to 1) gain a better understanding of the health and well-being of older Veterans over time and across settings and 2) assess the needs of older Veterans and their families across settings.

Methods: We used a mixed-methods approach. We analyzed administrative (i.e., Home Care Reporting System, Continuing Care Reporting System) and population-level data (i.e., The Life After Service Survey, Canadian Longitudinal Study on Aging) to examine the trajectories and transitions of older Veterans over time and across settings and the impact of different biopsychosocial factors. We conducted semi-structured interviews with older Veterans living in the community and long-term care homes and their families. Interview data will be analyzed using thematic analysis.

Results: We will present results from the quantitative and qualitative data analysis. We will demonstrate the trajectories of older Canadian Veterans over time and across settings. We will discuss the impact of various biopsychosocial factors on the physical and mental health of older Veterans. We will present results from the semi-structured interviews about the experiences and needs of older Veterans and their families.

Conclusions: This information will be used to better understand the determinants of older Veterans' health and well-being and make sure their needs are better met by the health system, policies, and programs in Canada**.**

Poster Presentations

P156: A Data Driven Conceptualization of Military to Civilian Transitions

Aronson, Keith, PhD[1]; Perkins, Daniel, PhD[1]; Karre, Jennifer, PhD[1]; Morgan, Nicole, PhD[1]

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Introduction: Veterans go through military-to-civilian transitions (MCTs), occurring over time and requiring significant life adjustments. With no widely accepted framework for evaluating the quality of MTCs (Pedlar, et al., 2019), it is difficult to identify who is thriving or struggling, and where supports may help. This study developed a data-driven conceptualization of how well individuals are transitioning to civilian life.

Methods: In The Veterans Metrics Initiative (TVMI) study, survey data was collected from active duty service members separating from the military (n = 9,566) and then every six months over 2.5 years. Objective and subjective data was collected to include seven domains: employment, education, financial, legal, social, physical, and mental health. Based on responses, participants' MCT was categorized as being problematic, at risk, or successful for each of the seven domains.

Results: For the employment and financial domains, after 2.5 years, fewer veterans were in the problematic category (employment: 46% at separation and 28% 2.5 years later; financial: 23% at separation and 12.5% 2.5 years later). More veterans were in the successful category 2.5 years later (employment: 41% to 53%; financial 40% to 48%).

For mental health, the percent of veterans in the successful category decreased over 2.5 years (31% to 28%), but the percent of veterans in the problematic category also decreased (41% to 34%), resulting in an increase in the at-risk category (28% to #37%).

For education and physical health, the percent of veterans in the successful category decreased (education: 79% to 69%; physical health 21% to 17%) and the percent of veterans in the problematic category increased over the 2.5 years (education: 9% to 12%; physical health 51% to 54%).

There was little change over time in the percent of veterans in each category for the social and legal domains.

A composite variable was created that included the employment, financial, social, and physical and mental health domains which were summed and placed into the problematic, at-risk, and successful categories. The percent of veterans with three of more successful domains increased over 2.5 years (31% to 34%) and the percent of veterans with three of more problematic domains decreased (35% to 25%).

Using crosstab and regression analyses, women, minorities, and enlisted, particularly junior enlisted, were more likely to struggle during the MCT.

Conclusions: Additional support would benefit veterans as the transition to civilian life and should focus on identifying and conducting outreach to specific veteran groups prior to and after military separation.

P158: Relationships between battlefield injury, pain, mobility and post-Service employment: the ADVANCE study

Burdett, Howard, PhD[1]; Schofield, Susie, MSc[2]; Dyball, Daniel, PhD[1]; Fear, Nicola, PhD[1]

[1]King's College London; [2]Imperial College London

Introduction: Numerous UK Armed Forces personnel were evacuated from the conflicts in Iraq and Afghanistan following battlefield injury. Many of these, particularly those with amputations due to their injuries, will leave Service as a consequence; amputation has been identified as a barrier to employment. We examined whether battlefield injury and amputation reduced employment rates after leaving the UK Armed Forces, and what role pain and mobility restrictions have in explaining such an effect.

Methods: Battlefield injured participants (n=406) and uninjured comparators (n=107) who had left the UK Armed Forces were drawn from the ADVANCE cohort of UK Service personnel who were aeromedically evacuated to a UK hospital while on deployment to Afghanistan. Employment was determined by self-report, and separated into paid employment and not in paid employment. Pain and mobility were drawn from the EQ-5D measure of health outcomes. Pain and mobility were analysed as potential mediators to a relationship between battlefield injury or amputation and employment; to do so a generalised structural equation model was fitted.

Results: Analysis determined that, in the presence of mediators, there was no significant direct effect of battlefield injury on being in paid employment, for either the amputee or the injured non-amputee groups compared to the uninjured comparison group. Mobility acted as a mediator for the relationship between battlefield injury and not being in paid employment (indirect effect OR 1.19 95% CI 1.02-1.37 for the injured non-amputee group, OR 1.33 95% CI 1.08-1.63 for amputee group), but pain did not.

Conclusions: These findings suggest that battlefield injury can impact on employment after leaving the UK Armed Forces, and that this impact is specifically due to restrictions on mobility as a consequence of the injuries sustained. In terms of re-entry to the civilian labour market following injury and exit from the military, tackling mobility restrictions should be the primary target of services and support.

P163: A systematic review and meta-analysis of self-reported perceived social support among combat-exposed military personnel

Grover, Laura, MSc[1]; Williamson, Charlotte, MSc[1]; Burdett, Howard, PhD[1]; Palmer, Laura, PhD[1]; Fear, Nicola, PhD[1]

[1]King's College London

Introduction: Perceived social support (PSS), defined as an individual's belief about availability and adequacy of social connections, has been identified as a protective factor against the negative effects of trauma in a variety of populations and contexts. The unique characteristics of military culture, such as comradery and stoicism, may influence social relationship quality. Combat deployment increases exposure to potentially traumatic events. Therefore, PSS may improve health and wellbeing in combat-exposed military personnel, especially those who experienced physical or psychological trauma. This systematic review aimed to synthesize studies investigating level of PSS, and associated factors, in combat-exposed military personnel who served in the Iraq/Afghanistan conflicts.

Methods: A systematic review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and registered on PROSPERO (registration number: CRD42023389759). Searches were carried out using five databases and were restricted to the beginning of the Iraq/Afghanistan conflicts (2001). Quantitative observational studies were included where a validated measure of PSS was used ≥ 6 months post-deployment. A quality assessment was performed on all studies (10% verified by a second reviewer). A meta-analysis generated pooled means for Deployment Risk and Resilience Inventory Post-Deployment Social Support (DRRI-PDSS) scores.

Results: 2030 papers were identified from which 36 were selected for inclusion. 32 studies were conducted in the US, 28 were cross-sectional and 25 were rated as having "fair" methodological quality. 19 studies used the DRRI-PDSS scale to measure PSS, mean score ranged from 46.8 to 60.4 (overall range 15-75, higher scores indicate better support). This will form the basis for the meta-analysis which is underway.

Most studies investigated mental health outcomes in relation to PSS, whilst only 3 explored physical health-related outcomes. Many studies explored the negative effects of low social support; associations frequently reported include high levels of PTSD, depression and suicidal ideation. Low levels of PSS were also associated with an increase in problematic behavioural and social factors, such as poor sleep quality and social reintegration difficulties. A few studies investigated the positive effects of high PSS, and associations were seen with an increase in post-traumatic growth. PSS was not associated with gender.

Conclusions: High levels of PSS promote health and wellbeing in combat-exposed military personnel 6+ months post-deployment. PSS should be targeted in psychosocial interventions and education programmes. Future studies should investigate PSS in military personnel who have a physical combat injury.

P164: Social support in male United Kingdom military personnel who deployed to Iraq/Afghanistan: analysis of baseline data from the ADVANCE study

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Introduction: Availability and adequacy of social support may be an important factor influencing health and wellbeing in military personnel. Structural social support refers to presence of social relationships, whilst functional social support incorporates quality of support, for example perceived social support.

Studies conducted with US military combat veterans have shown positive effects of high social support and negative effects of low social support. Despite this, little is known about whether social support differs in those with a physical combat injury or mental health problem.

The aim of this study was to assess the level of functional social support in the Armed Services Trauma Rehabilitation Outcome (ADVANCE) cohort to determine potential differences between those with (1) a physical combat injury (compared to uninjured), (2) an amputation injury (compared to no amputation) and (3) probable PTSD (compared to without).

Methods: Analyses are underway using data (collected 2015 – 2020) from a prospective cohort study investigating physical and psychosocial outcomes of battlefield casualties (with a matched, uninjured comparison group). Participants

were male UK armed forces personnel following deployment to Afghanistan (2002 – 2014). The injured group were identified using UK Ministry of Defence records. Participants completed self-report measures for psychosocial outcomes, including the Multidimensional Scale of Perceived Social Support (MDSPSS). Mean score ranged from 1 – 7 (theoretical midpoint 3.5, with higher scores indicating higher perceived levels of social support). Adjusted linear regression analyses were performed to determine differences in MDSPSS scores in those with a physical injury, amputation injury and probable PTSD.

Results: Participants (N = 1145) had a median age of 33 years (IQR 30 – 37) and the majority were White (90.3%). Functional social support (measured by the MDSPSS) in the overall sample was high, with a mean of 5.2 (SD 1.3). Preliminary findings suggest there are no differences in functional social support between the injured and uninjured group (coeff. = 0.35, p = 0.720), likewise in the amputation injury subgroup (compared to no amputation). Having probable PTSD (PCL-C ≥ 50) was associated with lower functional social support (coeff. = -10.18, p < 0.001).

Conclusions: Prior evidence suggests social support may be a protective factor for the negative effects of combat. Functional social support was high in the overall cohort, and lowest in those with probable PTSD. Identifying which groups require more social support will inform targeted interventions and care pathways. Future research will investigate the longitudinal trajectories of social support within this cohort.

P165: Understanding Clinical and Demographic Correlates of Medical Cannabis Use in Canadian Veterans: A Cross-Sectional Study Linking the Life After Services Studies 2019 and Health Administrative Databases

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Introduction: In recent years, Veterans Affairs Canada (VAC) has seen an increase in reimbursement for cannabis for medical purposes (CMP). Current evidence on cannabis effectiveness and safety in the context of mental health and posttraumatic stress disorder (PTSD) is limited. To address this knowledge gap, we conducted a cross-sectional study to investigate associations of CMP with clinical, demographic, and service characteristics.

Methods: This study linked administrative data on VAC reimbursement for CMP and responses from the 2019 Life After Services Studies (LASS), a cross-sectional survey that collected information on Veterans released from the Regular Force between 1998 and 2018. Using logistic regressions, we evaluated how CMP reimbursement for VAC clients (Yes/No) relates to demographic characteristics, PTSD, distress, anxiety, and other health and well-being factors. Given the strong univariate association between PTSD and CMP (odds ratio [OR]=6.2, CI 95%: 4.2-9.0), the multivariable analysis was stratified by PTSD status.

Results: The frequency of veterans reimbursed for CMP as of 31 March 2019 was 18.4% (n=238), corresponding to a weighted estimation of 7,140 veterans. Among veterans reimbursed for CMP, 86% were men, 24% were younger than 40 years old, 69% reported land service, 66% were junior non-commissioned members (NCM), 26% reported more than 20 years of service, 88% reported pain, 73% reported PTSD, 72% reported mood disorder, and 67% reported anxiety disorder. For those without PTSD, rank at release (NCM vs. officer), main activity (retired/disability vs. work/reserves), seen or talked to a psychologist or a social worker, pain and anxiety were retained in the final model and were significantly associated with CMP reimbursement. For those with PTSD, 20 or fewer years in service (vs. >20), pain, and depression were significantly associated with CMP and were retained in the final model. Interestingly, pain was retained regardless of PTSD status, with a similar magnitude effect: OR=2.9.

Conclusions: In this large cross-sectional study on a representative sample of Canadian Veterans, being NCM with comorbid pain and anxiety, retired or on disability, and seen by a psychologist or a social worker were associated with higher odds of medical cannabis reimbursement among those without PTSD. Having spent 20 or fewer years in service, comorbid pain and depression were significantly associated with medical cannabis reimbursement among those with PTSD. These findings could help inform VAC medical cannabis policy, programming and services offered for mental health, including PTSD, and guide future research on medical cannabis and mental health.

P166: Les transitions en contexte de douleur chronique : revue de littérature comparée de la transition à la vie adulte et de la transition de la vie militaire à la vie civile

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Introduction: La transition à la vie adulte est une période de changements et de développement identitaire. Avoir des douleurs chroniques lors de cette période engendre des défis dans plusieurs sphères de vie. Les vétérans vivent aussi une transition importante: celle de la vie militaire vers la vie civile qui est particulièrement difficile pour les vétérans avec de la douleur chronique. Celle-ci peut engendrer une diminution de la qualité de vie, une dégradation de la santé physique et mentale et une altération de leur fonctionnement social. **But :** Présenter une recension des écrits qui cherchera à identifier des défis communs liés à la douleur chronique lors des transitions.

Méthodes: Deux recherches documentaires ont été menées. Premièrement, les concepts de douleur chronique, de fonctionnement social, de jeunes adultes et de transition ont été interrogés sur les bases de données suivantes : Medline, PsychInfo, Cairn, Social Services Abstracts, Social Work Abstracts and Érudit. 30 articles ont été retenus. Deuxièmement, les concepts de douleur chronique, de transition et de vétéran ont été interrogés sur les bases de données suivantes : Medline, PsychInfo and CINAHL. 12 articles ont été choisis. Des documents du ministère des Anciens Combattants et de l'Université McMaster ont aussi été inclus.

Résultats: Lors du passage à la vie adulte, la douleur chronique affecte la santé physique et mentale, l'autonomisation, la capacité à faire des études et à travailler et le maintien de relations sociales chez les jeunes adultes. La transition vers les soins adultes a des impacts négatifs sur leur état de santé en raison d'un choc de culture, d'une mauvaise préparation et d'un manque d'accessibilité et d'adaptabilité des services. Chez les vétérans, la douleur chronique est associée à plusieurs comorbidités psychiatriques, une moins bonne qualité de vie, une atteinte au fonctionnement et une réduction du revenu d'emploi. Les vétérans vivent également un choc de culture lors de leur intégration à la vie civile. Finalement, la transition vers les soins civils est complexifiée par un manque de ressources dans les communautés.

Conclusions: Cette recension montre que plusieurs enjeux sont communs entre ces deux transitions (choc de culture, présence de troubles de santé mentale, manque d'accessibilité des soins, etc.). Pour approfondir les résultats de cette recension, un groupe de discussion composé de vétérans vivant avec de la douleur chronique sera organisé afin de discuter des résultats d'un projet de maîtrise portant sur la transition à la vie adulte des jeunes qui en sont également atteints.

P167: Using Machine Learning to predict daily Post-traumatic stress disorder and cannabis use disorder symptoms among non-treatment seeking veterans: A United Kingdom and United States study

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Introduction: Problematic cannabis use and post-traumatic

stress disorder (PTSD) are highly co-occurring and impactful among US and UK veterans. Cannabis use is prevalent among Afghanistan and Iraq-era veterans and rates of Cannabis Use Disorder have doubled in recent years. In this group, PTSD is also comorbid, with many veterans using cannabis to offset, manage or mitigate symptoms. Despite increased screening efforts among veterans, there are currently no effective strategies for predicting risk for PTSD and problematic drug use escalation before these conditions develop, worsen, or chronically manifest.

Methods: We performed a feasibility study following an intensive 12-week (in the US) or a 4-week (in the UK) longitudinal design (e.g., daily data collection), multiple passive data collection features via a bespoke app designed for the study called MAVERICK, as well as active data collection features (e.g., self-report) to predict clinically meaningful escalations in drug use and PTSD symptoms in US and UK veterans. Questionnaire data was collected twice a day for the US sample, and once a day for the UK sample. Passive data was collected continuously in the background.

Results: The study is currently underway and the results will be ready for presentation at CIMVHR Forum as a poster in October 2023. In total we expected to recruit 150 participants in the US, and 50 in the UK. Initial results of our study demonstrate that while PTSD symptoms and cannabis use are high, cannabis use itself does not influence reductions in PTSD symptoms. However, it does improve the perceived quality of life of veterans.

Conclusions: This trial will provide information on the feasibility and utility of a smartphone app (MAVERICK) to collect both active and passive data to predict PTSD symptoms and drug use in US and UK veteran populations. If the smartphone app is deemed feasible and acceptable to users, it has the potential to provide an effective measurement tool to detect PTSD and problematic drug use among veterans.

P168: Gender-Based Analysis Plus for the modernization of Veteran Affairs Canada´s disability benefit tools

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Program/Intervention Description: To obtain a favorable disability benefit from Veterans Affairs Canada (VAC), there must be clear medical evidence of a chronic or permanent disability, along with a determination of Entitlement and Assessment. Entitlement determines if the disability is related to service, and Assessment relates to the severity/extent of the disability with its impact on quality of life. VAC adjudicators use tools to ensure that all decisions are

consistent: the Entitlement Eligibility Guidelines (EEG) for Entitlement, and Table of Disabilities (TOD) for Assessment. VAC is currently modernizing the EEGs and TOD, and this work has included development of a tailored Gender-Based Analysis Plus (GBA Plus) methodology. GBA Plus is a process used to assess how diverse groups of people may experience policies and initiatives differently. GBA Plus goes beyond analytical consideration of biological sex and socio-cultural differences and specific to this work considers other identity factors, including: service characteristics, age, geography and disability to capture the evolving concept of diversity.

Evaluation Methods: Given the novel and complex nature of VAC disability benefit tools, a comprehensive review of the literature was conducted to shape how this GBA Plus intervention was going to be operationalized and evaluated. The resulting GBA Plus process was formalized and follows the iterative steps: 1) Identify potential issues/gaps, 2) Identify affected clients, 3) Gather facts and synthesize, 4) Develop Recommendations, and 5) Implement, Evaluate and Monitor. This GBA Plus intervention is being applied to the EEGs and TOD Chapters being modernized as part of the strategy to reduce processing time for VAC's disability benefits.

Results: Preliminary evaluations of this intervention's efficacy have been made for the new EEG on Sexual Dysfunction published in January 2022. Preliminary results in the 3rd and 4th quarters of 2021-2022 revealed an average decease in processing times of 11% for Female and Male Sexual Dysfunction conditions, and parity in the proportion of favorable decision rates for both sexes for these applications. As the process of modernizing the EEGs and TOD Chapters advances, more data will be available.

Conclusions: The current GBA Plus process will incorporate current research and identify gaps to plan for future developmental work on VAC's disability benefit tools. Applying GBA Plus to the EEGs and TOD is a novel and iterative process where the results will include recommendations for ongoing monitoring and maintenance of these tools. The positive impact of this intervention will continue to be evaluated for health equity and decreases in processing times.

P169: INSPIRE: INcreasing veteranS´ Pathways to Information, Resilience, and Empowerment through collaboration and co-design

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Introduction: The transition to life after service is one of the most difficult and complex challenges reported by Veterans, with 1 in 4 reporting a difficult transition. Poor mental and

physical health often stems from or can be exaggerated by difficulties encountered during this transition. Each year, the use of Veterans Affairs Canada (VAC) programs increases. This underscores the urgent demand for improved support during transition, and att the same time represents opportunities to expand and tailor preventative programs to promote long-term well-being and ensure effective service use. Supporting Veterans, particularly Veterans whose needs may not be traditionally well-represented, is key to ensuring their health and well-being post-service. This presentation overviews the process of collaborative co-design undertaken by researchers, stakeholders, and Veteran representatives as part of a multi-year collaborative project (Project INSPIRE) to conduct a needs assessment of the emerging challenges of Veterans experiencing transition out of service.

Methods: Since project commencement in April of 2022, Project INSPIRE has engaged and formed an advisory group consisting of various divisions within VAC, including Research, Transition Services, Health Professionals, Rehabilitation Program, Case Management Services, Office of Women and LBGTQ2 Veterans, and external Veteran advocacy groups such as the Rainbow Veterans of Canada, and Veterans with lived experiences. Co-design of research aims and a needs assessment tool with an advisory group consisting of Veterans who have lived experiences and stakeholders is a central feature in a multi-year collaboration aimed at identifying key needs and challenges of Veterans, with particular emphasis on groups that may not be traditionally well-represented in research.

Results: The results of the needs assessment will be analyzed through an intersectional lens to identify strengths, resources, and challenges tied to Veterans' changing identities. Findings will be interpreted by the advisory group to identify gaps in services and support. Finally, findings will be used to co-develop new services and programs as part of Project INSPIRE to meet the needs of Veterans and increase their resiliency during their transition from service.

Conclusions: In this presentation, we outline the methodologies used for collaboration and co-design. These methodologies can act as a blueprint for future collaboration and program development. This multi-year project continues to engage stakeholders in the long-term support of Canadian Military and Veteran health and well-being. Research and policy insights gained can also be applied to other high-risk groups with high trauma exposures, including first responders and healthcare workers nationally and internationally.

P172: Subjective and Objective Measurement of Underemployment Among Post-9/11 Veterans

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Introduction: In the U.S, veterans have higher rates of underemployed than civilians. Very few studies have examined underemployment among post-9/11 veterans. This is highly problematic given that underemployment is associated with lower incomes and poorer health and well-being among veterans and their families. In addition, the government's approach to measurement of underemployment has been criticized because it ignores various kinds of underemployment, including subjective underemployment.

Methods: The current study used one wave of data from The Veterans Metrics Initiative (TVMI) to describe underemployment among post-9/11 veterans who were working (n = 3,180). Underemployment was calculated using self-reports and using the Occupational Information Network (O*NET; U.S. Department of Labor). O*NET is the U.S.'s primary source of occupational information.

O*NET classifies occupations into five different job zones which groups occupations that are similar in education, experience, and training required. Job zone 1 occupations may require a high school diploma while job zone V requires a graduate or professional degree. Veteran occupations were placed into the five O*NET job zones. Veterans also provided their annual salary. In addition, median incomes for the five job zones was obtained from the Occupational Employment and Wage Statistics Survey. Proportions and ANOVAs were used to analyze data.

Results: 80% of veterans were employed and 52% had earned a Bachelor's or Master's degree. 26% had obtained a high school diploma/GED, vocational or technical degree, or some college. Most veterans were in job zone 3 or higher. 40% of veterans somewhat or strongly agreed that they were underemployed based on their educational attainment. Veterans from the enlisted ranks were less likely to report being underemployed. Only 1% of veterans had occupations that fell into job zone 1. Based on O*NET data, 100% of veterans with a high school diploma held occupations that were in a higher job zone than would be predicted. Education was positively associated with underemployment. There was high concordance between self-reported and O*NET indexed underemployment rates. Generally, underemployed veterans had lower salaries than veterans who were not underemployed.

Conclusions: This was the first study to examine underemployment among a large sample of post-9/11 veterans. Veterans ' occupations were typically in job zones at or above what would be predicted given their education. This suggests that veteran experiences may serve to place them in better job zones. Nonetheless, 40% of veterans reported being underemployed. Veterans should take

advantage of programs and services that are designed to enhance their career trajectories.

P176: A critical look at the medical cannabis self-education landscape: a scoping review and environmental scan of self-education tools for Veterans and CAF members living with chronic pain

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Introduction: With medical cannabis growing in popularity among Veterans, the evident information-seeking behaviours of individuals who use medical cannabis for chronic conditions, and the potential for benefits in management, there is a growing need for credible and effective Veteran focused self-education tools. This study aims to examine the medical cannabis self-education landscape for Veterans and CAF members living with chronic pain.

Methods: An environmental scan of grey literature and a systematic scoping review of existing self-education tools (2000 to present) for the use of medical cannabis in chronic pain, highlighting those designed for or used by Canadian Veterans and CAF members, were conducted using PRISMA guidelines. Six peer-reviewed databases including PubMed, EmBase, Proquest PILOTs, Scopus, Web of Science, and APA PsycNet were searched. The grey literature search included but was not limited to online resources such as Google (English and French keywords), Canadian cannabis retailers / companies, clinics, regulatory bodies, pharmacies, educational institutions, and non-profit websites. Key words used in the search strategy were reviewed by a medical librarian and a Veteran with lived experience. Two reviewers independently determined record inclusion or exclusion based on established criteria. Understandability and actionability of each identified tool were ranked using the Patient Education Materials Assessment Tool.

Results: Our search resulted in 6 peer reviewed records and 23 online sources that met inclusion criteria. Content analysis and quality of information on tools identified were conducted with 3 peer reviewed records. Two records focused on tools used in medical cannabis decision-making and one focused on a hardcopy tool (treatment agreement). Intersectionality factors and their potential roles in the effectiveness of the identified tools were rarely reported. One peer reviewed record found no gender differences in cannabis products selection when "described effects" of products were considered. Peer reviewed records confirmed the use of identified grey sources. On average, grey sources contained 5 tools (range 2-13) with blogs and FAQ pages the most common. Courses and guidebooks had the highest ranking in terms of understandability and actionability. Tool authors / creators ranged from policy makers (regulatory bodies) and industry representatives (cannabis dispensaries) to Veterans with lived experience.

Conclusions: Veteran-specific peer reviewed records for cannabis use in chronic pain are scarce and supplemented by grey sources. A better understanding of available tools, their features and effectiveness could help advance self-efficacy among Veterans and CAF members living with chronic pain.