

# Sex-Based Differences in Mental Health Service Use Between Canadian Veterans and Non-Veterans Residing in Ontario

Kate St. Cyr and Alyson L. Mahar

## Abstract

**Sex and gender may play a role in the association between occupational experiences and the mental health (MH) of defence and public safety personnel. This report summarizes the findings of three studies exploring sex-based differences in MH service use between Veterans and non-Veterans in Ontario. Female Veterans had significantly higher rates of MH-related physician visits, emergency department visits and hospitalizations compared to female non-Veterans. These findings impart useful information for individuals or organizations with the ability to influence healthcare policy, planning and delivery for the Canadian defence and public safety sectors.**

## The Issue

Individuals in defence and public safety occupations, including the Canadian Armed Forces (CAF) and the Royal Canadian Mounted Police (RCMP), may be exposed to unique physical, psychological and environmental stressors (Kelly and Vogt 2009; Sullivan-Kwantes et al. 2022). Individuals in these occupations may have an increased risk of exposure to potentially psychologically distressing events and, subsequently, a higher prevalence of mental health (MH) conditions compared to members of the general population (Rhead et al. 2022; Schult et al. 2019; Thompson et al. 2016).

Biological sex (physical and physiological features such as reproductive/sexual anatomy) and socio-cultural constructs of gender (behaviours, expressions and identities) may impact occupational experiences and associated MH outcomes. Sex and gender differences in mental disorder etiology and help-seeking behaviours have been documented among the general population, including plausible sex-based biological pathways and gendered socio-cultural risk factors such as gender-based violence, resulting in elevated rates of different MH conditions for women and gender-diverse folks (Riecher-Rössler 2017; Tordoff et al. 2022). In the context of defence and public safety, historical sex-based restrictions in the types of serving roles, gender-based discriminatory policies (Chaumba and Bride 2010) and a hypermasculine occupational culture may act in combination to influence mental

healthcare access during and at the end of a defence or public safety career.

Women represent a relatively small proportion of many defence and public safety occupations – approximately 16.5% of CAF members and Veterans (Government of Canada 2023) – and have historically been understudied in MH outcomes and service use research. Sex-specific or gender-specific estimates of MH conditions and service use often do not exist because of the small number of women in these occupations. When only overall estimates are available, meaningful differences may be obscured and the experiences of women hidden.

This report highlights the findings of two published population-level studies (St. Cyr et al. 2023, 2024) and a third in progress (St. Cyr 2024) that aimed to explore sex-specific differences in the rates of MH-related physician visits, emergency department (ED) visits and hospitalizations between Veterans and non-Veterans residing in Ontario.

## The Process

Sex, measured from provincial health insurance records, was used throughout this body of research given the absence of gender data. However, the findings likely represent an aggregate of both sex-based and gender-based pathways.

The studies summarized in this report used a matched retrospective cohort of CAF and RCMP Veterans in Ontario who were released from the forces between April 1, 1990, and December 31, 2019, and non-Veterans, matched on age, sex, geographic region and neighbourhood median income quintile.

Time-to-event models were used to estimate hazard ratios (HRs) for each MH-related service type. Models accounted for age, sex, region of residence and neighbourhood median income quintile via matching and, in addition, accounted for the number of major and minor comorbidities (measured using Johns Hopkins Aggregate Diagnosis Groups [ADGs]) (Starfield et al. 1991; Weiner et al. 1991) and rurality of residence via statistical adjustment.

### The Findings

A higher percentage of female Veterans had at least one MH-related physician visit, ED visit or hospitalization compared with male Veterans, male non-Veterans and female non-Veterans (Table 1).

Anxiety disorders accounted for approximately three-quarters of initial MH-related physician visits across all subgroups. Substance use was the most common reason for ED visits for female Veterans, while this was the least common reason female non-Veterans visited the ED; anxiety disorders

were the most common reason for ED visits among male Veterans and male non-Veterans. Mood disorders were the reason for 40% of female Veterans’ first psychiatric hospitalization compared to over 50% of female non-Veterans’ and 28% of male Veterans’ first hospitalization. Similarly, “other” reasons accounted for almost 40% of female Veterans’ first psychiatric hospitalization compared with 25% for female non-Veterans and less than 20% for male Veterans and non-Veterans (Figure 1).

**TABLE 1.**  
Percentage of Veterans and non-Veterans with at least one MH-related visit, by sex

Service type	Females		Males	
	Veterans (%)	Non-Veterans (%)	Veterans (%)	Non-Veterans (%)
Outpatient <sup>a</sup>	44.6	40.4	31.2	28.5
ED <sup>b</sup>	6.5	3.6	5.5	3.7
Hospitalization <sup>c</sup>	2.8	0.7	2.5	0.9

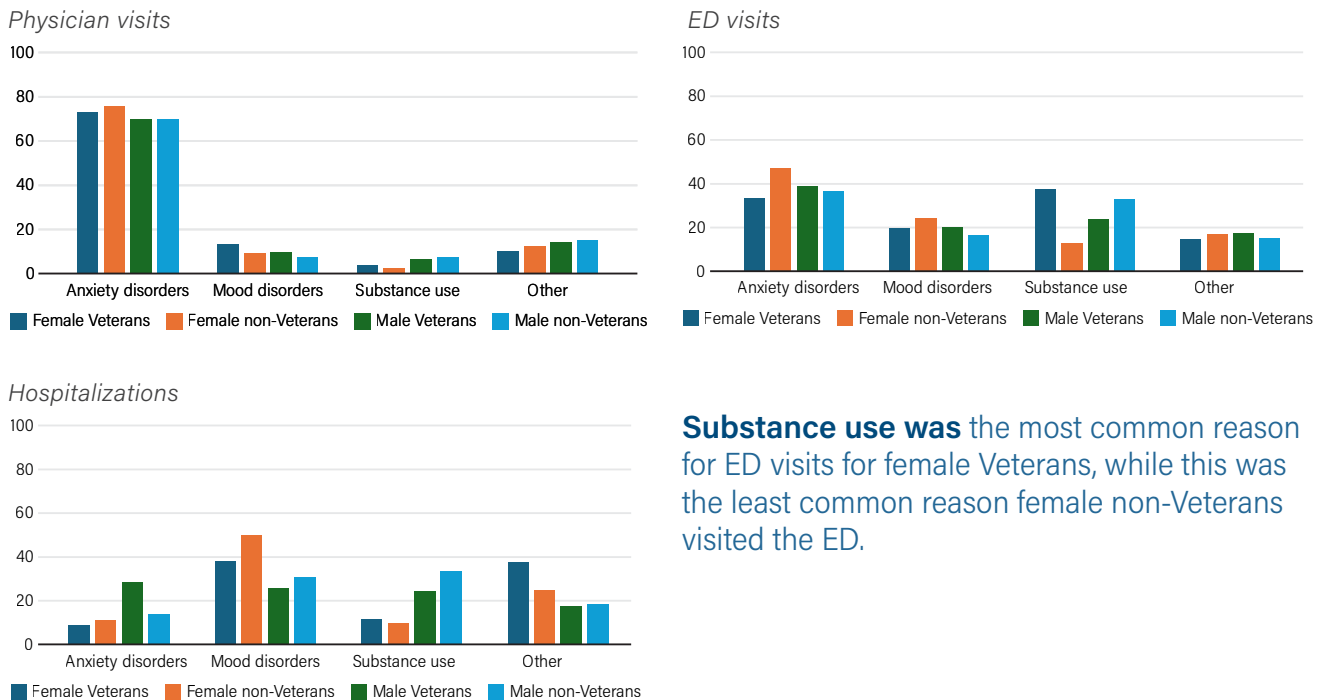
<sup>a</sup> Within first five years of follow-up.

<sup>b</sup> Over total follow-up.

<sup>c</sup> Within first 10 years of follow-up.

ED = emergency department; MH = mental health.

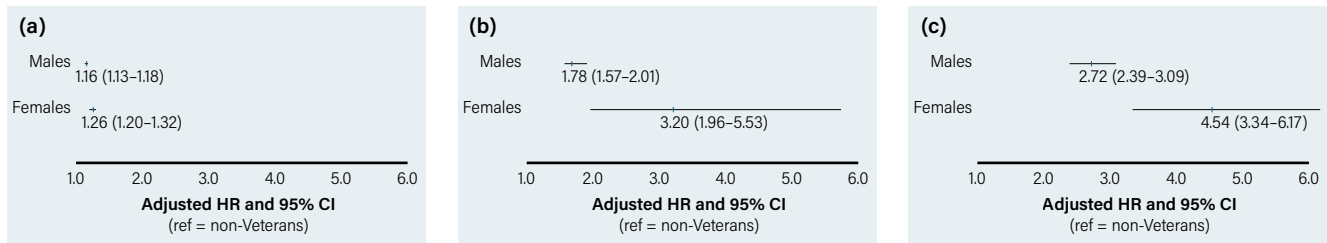
**FIGURE 1.**  
Common reasons for each type of MH service encounter



ED = emergency department; MH = mental health.

**Substance use was the most common reason for ED visits for female Veterans, while this was the least common reason female non-Veterans visited the ED.**

**FIGURE 2.**  
Adjusted HRs for MH-related (a) outpatient visits, (b) ED visits and (c) hospitalizations



CI = confidence interval; ED = emergency department; HR = hazard ratio; MH = mental health.

Across all service types, there was statistically significant heterogeneity between males and females, suggesting effect-measure modification by sex. Figure 2 displays the adjusted HRs for each type of MH service encounter.

### The Significance

These studies provide evidence that female Veterans access Ontario Health Insurance Plan (OHIP)-funded MH services at higher rates than non-Veterans, and the effect of Veteran status is stronger among females compared to males across all three MH service types. There are several potential explanations for the observed differences.

First, differences in the occupational experiences of female CAF and RCMP careers may result in a greater underlying need for mental healthcare among female Veterans. For example, female military personnel are more likely to experience military sexual trauma than males (Chaumba and Bride 2010), which may result in an increased prevalence of MH conditions (Lehavot et al. 2018; MacLean et al. 2018). A greater underlying need is supported by the higher rates of MH-related ED visits and hospitalizations, which suggest that female Veterans may experience serious MH illness following defence and public safety service at higher rates than either male Veterans or members of the general population.

Second, the higher rates of MH-related physician visits could be partially attributable to an interaction between occupational and socio-cultural gender-based healthcare-seeking behaviours. While in defence and public safety careers, remaining in good physical health and MH is critical. For example, CAF members are encouraged to be in regular contact with the military-specific healthcare system for health concerns, including MH issues. However, stigma around MH conditions may delay healthcare-seeking while still in service. These healthcare-seeking behaviours may interact with gender-based differences in healthcare-seeking behaviours (Cox 2014; Fikretoglu et al. 2008; Maguen et al. 2012), potentially leading to even larger differences in the rates of MH-related physician visits among female Veterans compared to female non-Veterans.

Third, larger differences in the rates of OHIP-funded MH services for female Veterans relative to female non-Veterans may be explained if female Veterans are less likely to access federally funded Veteran-specific MH services, such as specialized access to psychiatric outpatient care through Operational Stress Injury Clinics, compared to male Veterans.

### The Implications

The findings of this research have several healthcare planning, policy and delivery implications at both the provincial and federal levels. At the provincial level, where many MH services are delivered to Veterans, healthcare providers and policy makers should consider how the unique exposures and experiences of women and gender-diverse folks in defence and public safety occupations may impact their mental healthcare-seeking efforts and needs. Defence and public safety organizations, such as CAF and RCMP, should undertake additional research to better understand gender-specific MH needs so that MH resources, prevention and treatment services could be tailored to meet the unique needs of women and other gender-diverse groups. Similarly, organizations that facilitate mental healthcare access for Veterans, such as Veterans Affairs Canada, could conduct needs assessments to understand whether their current offerings meet the requirements of women and gender-diverse Veterans and to identify the unmet needs or potential barriers to accessing existing resources. Finally, recognizing the importance of lived gender identity and fostering a sense of inclusivity and belongingness across the spectrum of gender within military and Veteran organizations may help improve MH outcomes and increase MH service use among CAF members and Veterans. **HQ**

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## About the Authors

**Kate St. Cyr**, MSc, is a PhD candidate at the Dalla Lana School of Public Health in the University of Toronto in Toronto, ON. Kate can be reached by e-mail at [kate.stcyr@mail.utoronto.ca](mailto:kate.stcyr@mail.utoronto.ca).

**Alyson L. Mahar**, PhD, is an assistant professor in the School of Nursing at Queen's University in Kingston, ON.