











Prevalence of current chronic pain in Royal Canadian Mounted Police cadets

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ABSTRACT

Background: Nearly half of active duty Royal Canadian Mounted Police (RCMP) officers report experiencing current chronic pain (43%; i.e. pain lasting longer than 3 months). Most RCMP officers who report chronic pain indicate that the pain started after working as RCMP officers (91%). Baseline data on chronic pain prevalence among RCMP cadets has not been available.

Aims: The current study was designed to provide cross-sectional estimates of chronic pain prevalence among RCMP cadets starting the Cadet Training Program and to assess for sociodemographic differences among participants.

Methods: The RCMP Study uses a longitudinal prospective sequential experimental cohort design to create a clustered randomized trial that engages individual participants for 5.5 years. The current article provides cross-sectional associations between chronic pain prevalence and sociodemographic characteristics. Participants were RCMP cadets starting the Cadet Training Program ($n = 770$). Location, intensity (on a 0–10 scale and days per week experienced), and duration (number of months) of chronic pain were reported. Differences across sociodemographic characteristics were examined.

Results: Few RCMP cadets reported experiencing chronic pain (10%); lower back pain was rated as the most severe in terms of intensity and duration and second most frequently reported in number of days experienced per week. Prevalence of chronic pain was lower among RCMP cadets than among RCMP officers.

Conclusions: Chronic pain prevalence among active duty RCMP officers may result from or be moderated by operational duties, as well as routine aging. Future researchers could examine ways to mitigate chronic pain development during RCMP officer careers.

RÉSUMÉ

Contexte: Près de la moitié des agents de la Gendarmerie royale du Canada (GRC) en service actif déclarent souffrir de douleur chronique (43 %; c'est-à-dire une douleur qui dure plus de trois mois). La plupart des agents de la GRC qui déclarent souffrir de douleur chronique indiquent que la douleur a commencé après avoir travaillé comme agents de la GRC (91 %). Il n'existe pas de données de référence sur la prévalence de la douleur chronique chez les cadets de la GRC.

Objectifs: La présente étude a été conçue pour fournir des estimations transversales de la prévalence de la douleur chronique chez les cadets de la GRC qui commencent le Programme de formation des cadets et évaluer les différences sociodémographiques entre les participants.

Méthodes: L'étude sur la GRC utilise un devis de cohorte expérimental séquentiel prospectif longitudinal pour créer un essai randomisé en grappes impliquant des participants individuels pendant 5,5 ans. Le présent article présente des associations transversales entre la prévalence de la douleur chronique et les caractéristiques sociodémographiques. Les participants étaient des cadets de la GRC qui commençaient le Programme de formation des cadets ($n = 770$). Le lieu, l'intensité (sur une échelle de 0 à 10 et selon le nombre de jours par semaine où la douleur était ressentie), de même que la durée (nombre de mois) pendant laquelle la douleur chronique était ressentie, ont été déclarés.

Résultats: Peu de cadets de la GRC ont déclaré souffrir de douleur chronique (10 %); la douleur lombaire a été évaluée comme la plus sévère en termes d'intensité et de durée, et la deuxième la plus fréquemment rapportée en nombre de jours par semaine. La prévalence de la douleur chronique était plus faible chez les cadets de la GRC que chez les agents de la GRC.

Conclusions: La prévalence de la douleur chronique chez les agents de la GRC en service actif peut résulter des tâches opérationnelles ou être modérée par celles-ci, ainsi que par le vieillissement normal. Les futurs chercheurs pourraient examiner les moyens d'atténuer le développement de la douleur chronique au cours de la carrière des agents de la GRC.

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Chronic pain management in Canada is estimated to cost more than \$40 billion annually in terms of health care and lost productivity.¹ Pain lasting longer than 3 months is chronic² and occurs most commonly in the lower back, neck, upper extremities, and head.³ Many Canadians report experiencing past-month chronic pain (25%), with women and people aged 40 to 69 years being more likely to report chronic pain.^{4–6} For example, persons over age 40 years experience more musculoskeletal chronic pain (e.g., arthritis, fibromyalgia),⁷ and certain chronic pains can only be experienced by women (e.g., endometriosis, menstrual pain).⁸ Chronic pain has been associated with narcotic dependence,⁹ decreased quality of life,¹⁰ and mental health disorders such as anxiety disorders,¹¹ depressive disorders,^{12,13} and posttraumatic stress disorder.^{13–15}

Public safety personnel (PSP; e.g., firefighters, paramedics, police officers)¹⁶ are at an increased risk for physical injuries.¹⁷ PSP are frequently exposed to potentially psychologically traumatic events, increasing risk for developing mental health disorders,¹⁸ and for physical harm (e.g., explosions, physical attacks).^{18–20} Royal Canadian Mounted Police (RCMP) officers report frequent potentially psychologically traumatic event exposures (e.g., physical assault, assault with a weapon) associated with extended periods of inactivity followed by moments of substantial physical stress (e.g., stakeouts), increasing injury risks.¹⁷ There are associations between chronic pain and diverse mental health disorders among RCMP officers;²¹ accordingly, the chronic pain prevalence among new RCMP cadets can provide insights into the impact of their service on mental and physical well-being.

Chronic pain prevalence assessments for RCMP are limited. A 1998 study estimated lifetime (54.9%) and past-year (41.8%) chronic back pain prevalence among RCMP, with most participants reporting chronic pain starting after their careers began (91.5%).²² Participants implicated long periods sitting in the police vehicle (82.6%), police vehicle seats (75.4%), and duty belts (58.1%). The study reported specifically on lower back pain and did not include information about perceived level or duration of pain. The study also reported on active duty RCMP officers and did not gather baseline data on cadets during training.²²

Despite ongoing organizational efforts to mitigate chronic pain challenges, a more recent 2017 study of RCMP officers evidenced that nearly half reported current chronic pain (43.4%), with most reporting that it began after they had started working as officers (91%).²³ Commonly reported chronic pain areas were lower back (26.5%), shoulder (19.6%), and neck (17.8%). Participants rated their level of pain on a 10-point scale (where 10 signifies a high level of pain), indicating an average pain level of 4.37 for lower back, 3.94 for shoulder, and 3.65 for neck. Participants also reported experiencing pain approximately 5 days per week for an average duration of 34.23 (shoulder) to 42.03 (lower back) months. The study again focused on RCMP officers rather than cadets starting their careers.²³

No study to date has provided baseline data for chronic pain prevalence among RCMP cadets starting

the Cadet Training Program. The current study was designed to provide estimates of current chronic pain prevalence among RCMP cadets starting the Cadet Training Program and to assess for sociodemographic differences in chronic pain among participants. Participants with previous PSP service, women, and those 40 years or older were expected to report higher prevalence of chronic pain.

Methods

Procedure

The current study data were collected as a part of the larger longitudinal RCMP Study. The RCMP Study uses a longitudinal prospective sequential experimental cohort design to create a clustered randomized trial that engages individual participants for 5.5 years, with the current article providing cross-sectional associations between chronic pain and sociodemographic factors at pretraining. Complete details regarding the RCMP Study methods and data collection have been published in a protocol paper.²⁴ The RCMP Study was approved by the University of Regina Institutional Research Ethics Board (File No. 2019–055) and the RCMP Research Ethics Board (File No. SKM_C30818021312580). The RCMP Study was also approved through a Privacy Impact Assessment as part of the overall approval including the National Administrative Records Management System File No. 201611123286 and Public Services and Procurement Canada File No. 201701491/M7594174191. Data for the current study were collected cross-sectionally at the start of the Cadet Training Program via an online self-report survey.

Data and Sample

The current study participants were a subsample of RCMP Study cadet participants who started the 26-week Cadet Training Program as a part of the Standard Training Program²⁴ and responded to questions related to chronic pain ($n = 770$). As part of the overall RCMP Study,²⁴ participants were required to explicitly indicate consent prior to completing online surveys; thus, consent was recorded electronically as a part of the online

survey. Consent was then explicitly reaffirmed at several points throughout the data collection. RCMP cadets were Canadian citizens or permanent residents, 19 to 57 years, who can fluently read, write, and speak English or French.²⁵ Cadets must also meet certain recruitment requirements, including a polygraph test, security clearances, medical examinations, and minimum physical standards.²⁵ No criteria excluded cadets qualified for Cadet Training Program from participating in the study.

Measures

Chronic Pain Questionnaire

The Chronic Pain Questionnaire²³ is a self-report questionnaire designed to measure the location, intensity, and duration of chronic pain. Participants were first asked, “Do you experience chronic pain (i.e., pain more days than not, lasting longer than 3 months)?” Response options included “Yes,” “Yes, but I’d rather not discuss it,” “No,” and “Prefer not to answer.” Participants answering “yes” were subsequently shown items related to the location, intensity, duration, and perceived cause of their pain. Chronic pain intensity was measured on a scale from 0 to 10 (0 = *no pain*; 10 = *pain that sends you to the hospital*). Chronic pain duration was measured by asking the number of days per week, on average, and for how many months the pain has persisted. Participants who identified more than one location of chronic pain were also asked to identify the location that causes the most interference. Participants were then asked about the cause of the chronic pain that interferes most with their life. Items such as, “What caused the chronic pain that most interfered with your life?” were rated (e.g., *Injury related to active duty*, *Injury related to work other than active duty*). Reliability for the current sample, assessed using Cronbach’s alpha, was excellent ($\alpha = 0.92$).

Statistical Analyses

SPSS v29 Premium was used to conduct the quantitative analyses. All a priori power analysis estimates are detailed in the associated protocol paper.²⁴ Participants were grouped into sociodemographic categories (i.e., age, gender [i.e., two-spirit, non-binary, other—please specify], sex at birth, education, ethnicity, religion, marital status, province of residence) for descriptive statistics and comparisons. Participants responding “Yes” and “Yes, but I’d prefer not to discuss it,” to the question “Do you experience chronic pain?” were amalgamated under “yes.” When asked whether they experienced chronic pain, fewer than five participants responded “Prefer not to answer” and were therefore left out of the analyses

to protect participant confidentiality. Normality assumptions were assessed with Kolmogorov-Smirnov tests were conducted for samples of ≥ 50 and Shapiro-Wilk tests for samples of < 50 . Independent sample *t* tests and analysis of variance *F* tests were performed to test for statistically significant differences in pain location, intensity, and duration between sociodemographic categories. Holm-Bonferroni adjustments were adopted ($\alpha < 0.05$, two-sided tests) for all analyses to control the familywise error rate. Missing data were addressed using listwise deletion for all analyses. Effect size estimates for comparisons used Cohen’s *d* values (i.e., small, $d = 0.20$; medium, $d = 0.50$; large, $d = 0.80$) or partial eta squared (i.e., small, $\eta_p^2 = .01$; medium, $\eta_p^2 = 0.06$; large, $\eta_p^2 = 0.14$), as appropriate.

A series of binary and multivariate logistic regression models were conducted to examine the relationship between sociodemographic variables and positive screens for chronic pain, as appropriate. Odds ratios and their 95% confidence intervals are reported.

Results

Kolmogorov-Smirnov and Shapiro-Wilk tests indicated that no data distributions departed from normality; accordingly, parametric statistical tests were used. Details of self-reported participant sociodemographic characteristics and chronic pain prevalence are provided in Table 1. Most cadets who reported chronic pain ($n = 76$) were males (65.8%) between 19 and 29 years (52.6%), came to the Cadet Training Program from Western Canada (76.3%; i.e., British Columbia, Alberta, Saskatchewan, Manitoba)^a, and reported having either some postsecondary school including a 2- or 3-year postsecondary program (38.2%) or a university degree, 4-year college, or higher level of education (40.8%). Several cadets reported previous years of PSP service (36.8%, $n = 28$; $M = 6.48$ years, $SD = 6.38$ years). Gender and sex are both presented in Table 1; however, statistical analysis with gender-diverse participants (i.e., those identifying as two-spirit, non-binary, or other [please specify]) was not possible due to no gender diverse participants in the current sample completing the Chronic Pain Questionnaire.

Participants 40 to 49 years had statistically significantly higher chances of reporting pain than those 19 to 39 years old (odds ratio = 2.85, 95% confidence interval 1.17–6.96). Participants who came to the Cadet Training Program from Eastern (i.e., Ontario and Quebec) and Atlantic Canada (i.e., Prince Edward Island, Nova Scotia, New Brunswick, Newfoundland) had statistically significantly less chance of reporting chronic pain than participants from Western Canada ($P_s < 0.05$). No other

Table 1. Sociodemographic characteristics and self-reported chronic pain among RCMP cadets.

Total sample	% (n) ^a	Do you experience chronic pain (i.e., pain more days than not, lasting longer than 3 months)?		
		Yes, % (n)	No, % (n)	OR (95% CI)
	100 (770)	9.9 (76)	90.1 (694)	—
Gender				
Male	72.3 (557)	65.8 (50)	72.5 (503)	1.00
Female	25.2 (194)	32.9 (25)	23.6 (164)	1.38 (0.78, 2.41)
Gender-diverse (i.e., two-spirit, non-binary, or other [please specify])	—	—	—	—
Sex				
Male	72.3 (557)	65.8 (50)	72.5 (503)	1.00
Female	25.2 (194)	32.9 (25)	23.6 (164)	1.38 (0.78, 2.41)
Age				
19–29	60.0 (462)	52.6 (40)	60.4 (419)	1.00
30–39	28.1 (216)	32.9 (25)	27.5 (191)	1.40 (0.78, 2.53)
40–49	6.4 (49)	11.8 (9)	5.5 (38)	2.85 (1.17, 6.96)*
50–59	^b	^b	^b	—
Marital status				
Single	47.2 (364)	44.7 (34)	47.3 (328)	1.00
Separated/divorced	1.6 (12)	^b	^b	0.61 (0.07, 5.58)
Married/common-law	43.0 (331)	44.7 (34)	42.5 (295)	0.70 (0.39, 1.24)
Province of residence				
Western Canada (BC, AB, SK, MB)	53.0 (408)	76.3 (58)	50.1 (348)	1.00
Eastern Canada (ON, QC)	34.7 (267)	15.8 (12)	36.5 (253)	0.24 (0.12, 0.49)***
Atlantic Canada (PEI, NS, NB, NFL)	11.3 (87)	7.9 (6)	11.5 (80)	0.37 (0.14, 0.98)*
Northern Territories (YK, NWT, NVT)	1.0 (8)	—	1.2 (8)	—
Education				
High school graduate or less	10.3 (79)	11.8 (9)	9.9 (69)	1.00
Some postsecondary school	14.5 (112)	38.2 (29)	43.7 (303)	0.73 (0.33, 1.62)
University degree/4-year college or higher	67.9 (523)	40.8 (31)	39.3 (273)	0.87 (0.40, 1.91)
Previous PSP experience				
No	56.4 (434)	63.2 (48)	66.6 (462)	1.00
Yes	30.8 (237)	36.8 (28)	33.0 (229)	1.15 (0.65, 2.01)

AB = Alberta; BC = British Columbia; MB = Manitoba; NB = New Brunswick; NFL = Newfoundland; NS = Nova Scotia; NVT = Nunavut; NWT = Northwest Territories; ON = Ontario; PEI = Prince Edward Island; QC = Quebec; SK = Saskatchewan; YK = Yukon.

^aTotal percentages may not sum to 100 and *ns* may not sum to 770 due to nonresponse or responding “prefer not to answer.”

^b*n* ≤ 5; therefore, sample not reported.

P* ≤ 0.05; *P* ≤ 0.01; ****P* ≤ 0.001.

Table 2. Pain location, intensity, and duration.

	Lower back	Shoulder	Arm	Neck	Leg	Hand	Foot	Headaches	Other
Total sample	34.2 (26)	27.6 (21)	11.8 (9)	18.4 (14)	22.4 (17)	9.2 (7)	14.5 (11)	11.8 (9)	11.8 (9)
					Location, % (n) ^a				
Total sample	3.8 (1.8)	3.4 (2.0)	0.9 (1.4)	3.6 (2.4)	3.2 (2.7)	0.0 (0.0)	1.9 (3.0)	2.0 (2.6)	3.6 (2.8)
					Intensity, <i>M</i> (SD) ^b				
Total sample	4.6 (2.3)	5.1 (2.4)	2.1 (3.1)	4.5 (2.9)	4.6 (2.5)	1.2 (2.9)	3.9 (3.7)	1.4 (1.4)	5.3 (2.4)
					Duration, <i>M</i> (SD) days per week				
Total sample	63.2 (77.1)	32.9 (53.9)	3.7 (4.1)	25.9 (30.8)	38.6 (67.7)	4.2 (10.2)	28.0 (46.0)	9.0 (18.0)	26.7 (46.5)
					Duration, <i>M</i> (SD) total number of months				

^aTotal percentages may not sum to 100 and *ns* may not sum to 76 due to nonresponse. Pain location not mutually exclusive.

^bIntensity scores range from 0 to 10.

statistically significant differences were found across sociodemographic characteristics. See Table 1 for complete sociodemographic comparisons.

Small sample sizes prohibited reporting stratified sociodemographic details about the location of chronic pain, intensity of chronic pain, duration of chronic pain in days per week, and total number of months experiencing chronic pain. Total sample reports of location of chronic pain, intensity of chronic pain, duration of chronic pain in days per week, and total number of months experiencing chronic pain are reported in Table 2. Lower back pain was reported as the most common location (34.2%), followed

by shoulder (27.6%) and leg pain (22.4%). Women reported statistically significantly greater intensity ($M = 5.16$, $SD = 1.50$) of lower back pain than men ($M = 3.40$, $SD = 1.70$), $t(24) = -2.26$, $P < 0.01$, Cohen's $d = -1.05$. There were no other statistically significant differences in chronic pain intensity across sociodemographic categories. There were no statistically significant differences across sociodemographic differences with respect to number of days per week pain was experienced or number of months pain had endured. Cadets reported perceiving the cause of their chronic pain as related to active duty (13.2%), a work-related injury other than

active duty (11.8%), an injury unrelated to work (28.9%) or being unsure of the cause of their chronic pain (18.4%). Data were collected at the start of the Cadet Training Program; therefore, active duty and work-related injuries refer to service outside of the RCMP.

Discussion

The current study was designed to examine baseline estimates and sociodemographic differences in reported current chronic pain among RCMP cadets. The current results indicated that approximately 1 in 10 RCMP cadets reported experiencing chronic pain when starting the Cadet Training Program, which is substantially lower than reported for the Canadian general population (i.e., one in four).^{4–6} Participants coming to the Cadet Training Program from Eastern and Atlantic Canada were statistically significantly less likely to report chronic pain than those who came to the Cadet Training Program from Western Canada, which contradicts published general population research evidencing comparable chronic pain prevalence across Canadian regions.⁶ Research with additional RCMP cadet samples may help clarify whether the discrepancy is a result of a sampling bias related to more RCMP cadets coming from Western Canada than from Eastern and Atlantic Canada.

Women cadets reported statistically significantly greater intensity of lower back pain than did men cadets. The current study did not fully examine the cause of reported chronic pain. Women in the study may have reported more back pain than participating men due to chronic pain conditions only experienced by women (e.g., endometriosis, menstrual pain).^{8,26} Several other proffered reasons that may explain the higher reported intensity of chronic pain among women include gender roles, willingness to seek treatment, willingness to report pain, and underlying biological influences; however, a complete discussion of possible explanations is beyond the current study scope (for a review, see Barley and Fillingim).²⁶

Cadets were expected to report less chronic pain than active duty RCMP members.²³ Cadets who were older and those with previous PSP experience were expected to report higher levels of chronic pain than cadets who were younger and had no previous PSP experience.^{4–6,17} The chronic pain prevalence reported by RCMP cadets starting the Cadet Training Program was lower than published results for active duty members,^{22,23} which implicates occupational risk factors as probable explanations for the high rates of chronic pain reported by active duty RCMP officers. Active duty RCMP officers have been exposed to more occupational stressors than cadets

starting the Cadet Training Program and are also typically older than cadets, which increases their risk for physical injuries and thus chronic pain.¹⁷ Older cadets (i.e., 40–49 years) were statistically significantly more likely to report experiencing chronic pain than younger cadets (i.e., ≤ 39 years). The difference further supports age as a contributing factor for chronic pain prevalence. Cadets with previous years of PSP experience were expected to report more chronic pain than cadets without previous experience; however, cadets starting the Cadet Training Program with previous PSP service were no more likely than cadets without previous PSP service to report chronic pain. Reported years of PSP service were low (i.e., approximately 6 years); therefore, cadets with prior PSP experience may not have been exposed to as many occupational risk factors during their previous service, leading to lower risk for chronic pain.²³

Level of physical activity may also partly explain differences in chronic pain prevalence between cadets and active duty RCMP. Previous population-based studies have indicated that physical exercise may indeed reduce the risk of chronic pain.^{27,28} Cadets devote effort into attaining specific fitness standards prior to active duty service, undergoing several physical fitness examinations prior to graduating; however, less emphasis may be placed on physical fitness during their service because police officer fitness declines from recruit training through their years of service due to occupational factors (e.g., stress, shift work, poor sleep, and poor diet).^{29–31} Active duty RCMP report experiencing occupational stressors related to finding time to stay in good physical condition and eating healthy at work.³² Active duty RCMP officers likely also experience decreased levels of physical activity compared to cadets, having less time to devote to exercise and fewer formal structural supports for maintaining their fitness after graduating from the Cadet Training Program.^{33,34}

The current study results evidence lower back pain as the most severe and common form of chronic pain among RCMP cadets. Lower back pain was rated as the most severe in terms of intensity, second most frequent in terms of days experienced per week, and most frequent in terms of months experienced. Similarly, RCMP officers rated lower back pain as being the most intense, experienced on the most days per week, and experienced for the longest duration.²³ Prevalence of lower back pain was higher in active duty RCMP officers (54.9%)²² than in cadets (34.2%), likely due to on-the-job experience and repeated activities related to job duties (i.e., wearing duty belts, sitting for long periods). Duty belts and prolonged time spent in police vehicles likely contribute to increased lower back pain in police officers.^{35–39} Evidence-based efforts to mitigating the causes and consequences of chronic pain among police are few, but some studies

suggest load-bearing vests,^{35,39} thigh holsters,³⁹ and seats with lumbar support³⁸ as available options to reduce chronic lower back pain. Research results from other police services suggest that employees may not be aware of allowable beneficial uniform alterations;⁴⁰ accordingly, communications regarding ergonomic changes to uniforms might help mitigate chronic back pain among active duty RCMP. Research examining the impact of ergonomic changes to RCMP duty equipment and fleet vehicles may help to further mitigate the development of chronic back pain among active duty RCMP.

Limitations

The current study appears to be the first to provide baseline chronic pain prevalence among RCMP cadets prior to the starting the Cadet Training Program. The overall RCMP Study limitations have been presented in the published protocol paper.²⁴ The current study has several specific limitations that can help inform future research directions: (1) insufficient sample size to stratify baseline chronic pain experiences across sociodemographic variables; (2) the sample was mostly men, which limited gender comparisons; (3) participation in the RCMP Study is voluntary, which means that chronic pain prevalence for all RCMP cadets (i.e., those who did and did not participate in the study) remains unknown; (4) no objective physical or functional assessment data were collected and no historical medical data were collected; and (5) the sample size used in the current study may not have been sufficient to have attained adequate statistical power to identify statistically significant associations, and therefore odds estimates should be interpreted with caution. Future research could obtain a larger sample, with more diverse sociodemographic characteristics, supplemented by biomedical assessments, which would provide more nuanced information about chronic pain prevalence among RCMP cadets starting the Cadet Training Program. Chronic pain and mental health are highly comorbid.^{11–15} Future research could also examine proactive and responsive mental health treatments that may help to mitigate the impact of chronic pain.

Conclusions

This study adds to the growing literature on chronic pain prevalence within PSP populations by clarifying the prevalence of current chronic pain among RCMP cadets beginning the Cadet Training Program. Findings suggest that 1 in 10 RCMP cadets experience

chronic pain at the start of the Cadet Training Program, which is less than the prevalence for active duty RCMP officers (i.e., approximately one in two).^{22,23} The high prevalence of chronic pain among active duty RCMP officers may be a result of their operational duties, duty equipment, fleet vehicles, levels of physical activity, and higher prevalence of self-reported mental health disorder symptoms⁴¹ instead of being singularly associated with routine aging. There may be opportunities to mitigate chronic pain among RCMP cadets through ergonomic alterations to uniforms and equipment. Evidence-based mitigation strategies to reduce chronic pain among active duty RCMP cadets (e.g., structural supports for regular exercise, changes to uniforms and equipment), along with proactive and responsive mental health treatments, could support recruitment and retention, as well as mitigate risks for comorbid mental health conditions.²¹

Note

- [a] In general, the RCMP has few recruits from Ontario and Québec because both provinces have provincial police services.

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Data Availability Statement











The data sets presented in this article are not readily available. Data sets will be made available only for independent confirmation purposes and only to persons with the necessary ethical and security clearances as defined by the Research Ethics Board at the University of Regina and the contractual obligations with the Royal Canadian Mounted Police. Requests regarding the

data sets can be made to nick.carleton@uregina.ca.

Disclosure Statement

No potential conflicts of interest are reported by the author(s).

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