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Mental disorders, suicidal ideation, plans and attempts among Canadian police

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Background	Recent investigations have demonstrated a significant prevalence of mental health disorders, including post-traumatic stress disorder (PTSD), and suicidal ideation, plans and attempts among Canadian public safety personnel, including police officers. What remains unknown is the relationship between mental disorders and suicide among sworn police officers, and the prevalence of both among civilian police workers.
Aims	To examine the relationship between suicidal ideation, plans and attempts and positive mental health screens for depression, anxiety, panic disorder, alcohol abuse and PTSD among Canadian sworn and civilian police employees.
Methods	Participants completed an online survey that included self-report screening tools for depression, anxiety, panic disorder, alcohol abuse and PTSD. Respondents were also asked if they ever contemplated, planned or attempted suicide. Between-group (Royal Canadian Mounted Police [RCMP], provincial/municipal police and civilians) differences on mental health screening tools were calculated using Kruskal–Wallis analyses. The relationship between mental disorders and suicidal ideation, plans and attempts was evaluated with a series of logistic regressions.
Results	There were 4236 civilian and sworn officer participants in the study. RCMP officers reported more suicidal ideation than other police and scored highest on measures of PTSD, depression, anxiety, stress and panic disorder, which were significantly associated with suicidal ideation and plans but not attempts. Relative to provincial and municipal police, civilians reported more suicide attempts and scored higher on measures of anxiety.
Conclusions	The results identify a strong relationship between mental health disorders and increased risk for suicidal ideation, plans and attempts among sworn and civilian Canadian police employees.
Key words	Mental disorders; police; post-traumatic stress disorder; suicidal ideation; suicide.

Introduction

The co-morbid association between mental disorders including post-traumatic stress disorder (PTSD), anxiety disorders, depressive disorders and suicide has been documented in several psychiatric and military populations [1]. However, these investigations have only recently been undertaken in first responders and other public safety personnel (PSP; e.g. correctional officers, firefighters, paramedics, police and public safety communications officials [e.g. call centre operators/dispatchers]) [2,3]. Mental health disorders and suicidal behaviours (i.e. ideation, planning and attempts) are significant concerns for law enforcement personnel [2–4]. However, there is limited empirical evidence on the extent and nature of this relationship across departments and occupational roles. Prevalence estimates for mental disorders, such as PTSD, major depressive disorder (MDD) and general anxiety disorder (GAD) among PSP vary greatly, but generally far exceed prevalence rates among the general population (e.g. [2,3,5,6]) and can increase the risk for suicide [7]. In a recent study, approximately 44% of respondents across PSP categories screened positive for at least one mental disorder [2]. In the same study, municipal and provincial police were grouped and 37% screening positive for one or more mental disorders, whereas 50% of federal Royal Canadian Mounted Police (RCMP) screened positive for one or more mental disorders.

Key learning points

What is already known about this subject:

- Around 44% of Canadian public safety personnel (PSP) including police officers screened positive for one or more mental health disorders, and substantial proportions of officers reported past-year and lifetime suicidal ideation, planning and attempts.
- The impact of occupational stress injuries to PSP productivity and personal wellness have been recognized by recent updates to Canadian legislation, extending the timeline and qualification of psychological injuries for worker's compensation. However, qualifying disorders are typically limited to post-traumatic stress disorder (PTSD) [8].
- The prevalence of mental health disorders and their relationship to suicidal ideation, plans and attempts remain unknown for police professionals at different levels of employment (sworn and civilian members) and government (municipal, provincial and federal).

What this study adds:

- Screening positive on measures of mental health disorders, including PTSD, depression, generalized and social anxiety, alcohol abuse and panic disorder was associated with an increased likelihood for suicidal ideation and plans, but not attempts, among federal, provincial and municipal police officers.
- Civilian police workers reported a higher prevalence of suicide attempts relative to sworn officers. Civilians who scored higher on measures of PTSD were also more likely to contemplate, but not plan or attempt, death by suicide in their lifetime, highlighting the need to address the mental health of police workers in roles beyond sworn officers.
- Attempted death by suicide appears strongly associated with positive screens for PTSD among federal, provincial and municipal police, highlighting the link between mental health disorders and suicidal behaviours for at-risk occupational groups.

What impact this may have on practice or policy:

- Presumptive legislation that qualifies police officers, and other PSP, for worker's compensation might be extended to cover injuries beyond PTSD. Based on the current study, sworn and civilian police employees who demonstrate significant symptoms of stress, depression, anxiety (social and generalized) and panic disorder might also qualify under the said legislation.
- Organizational prevention and treatment programs for sworn and civilian police workers might be tailored to address their unique occupational roles and exposures to trauma, as well as the differences in the incidence of mental health disorders and risk for suicidal ideation, planning and behaviour identified by the current study.

Suicidal behaviours are a concern among the general public and are more prevalent among PSP [3,6]. Empirical investigations of suicidal behaviours among specific PSP groups mostly focus on police officers' experiences [5,9] and indicate that rates of suicidal behaviours will unequivocally vary across samples [3,5,6]. Results of a recent systematic review indicated that research on completed suicide rates for police officers was inconsistent, indicating rates might be higher, comparable to, or lower than the general population [5]. A related study with Australian emergency and protective service workers evidenced suicide rates for police officers as not significantly higher than other occupational groups (i.e. non-emergency and protective service workers) [6]. However, other researchers have found that police officer suicide completion rates were higher than for other occupations [10], indicating substantial proportions of PSP reporting past-year and lifetime suicidal ideation (10%, 28%), planning (4%, 13%) or attempts (0.4%, 4.6%) [3].

Police officers' increased risk of suicidal thoughts may be partially explained by both the interpersonal-psychological theory of suicide [11,12] and Klonsky and May's [13] three-step theory. High exposure to potentially psychologically traumatic events [14] may increase officers' risk for suicidal behaviours as a result of repeated exposure to 'painful' and provocative experiences [5]. Persistent exposure to such traumatic and life-threatening incidents could lower a police officer's fear of death and elevate their physical pain tolerance [12,13], which together have been linked to highly lethal means used in suicide attempts (e.g. firearms are easily accessible to officers) [10,15].

The three-step theory of suicide [13] was built upon the interpersonal-psychological theory [11,12] and appears suitable as an explanatory framework for understanding how police officers may develop progressive suicidal behaviours. Firstly, suicidal ideation begins with feelings of pain (e.g. psychological or physical) and hopelessness. Secondly, the presence of pain and hopelessness, coupled with low or absent connectedness, exacerbate suicidal ideation leading to suicidal planning. Thirdly, whether a suicide attempt is made depends

upon several contributory factors: (i) dispositional—possessing the genetic characteristics necessary to 'manage' the gruesome realities of suicide (e.g. pain and blood); (ii) acquired—habituation to pain, injury, fear and death as a result of exposure to potentially psychologically traumatic events; (iii) practical—factors facilitating a suicide attempt, such as the knowledge of and access to lethal means. A suicide attempt might occur when an individual with suicidal ideation has the impetus and capacity to enact a plan [13].

In previously published results, sworn municipal and provincial police, and the civilians who work for police agencies, were grouped together and were among the lowest PSP category for a frequency of positive screens [2] and suicidality [3]. Analyzing responses from sworn police combined with civilian employees meant there was no way to assess potential differences between the groups; as such, potentially important role-specific details regarding mental health disorders and suicidal behaviours remain unknown. The current study was designed to examine the relationship between suicidal behaviours (i.e. ideation, plans and attempts) and positive mental health screens for several mental disorders (i.e. PTSD, MDD, generalized anxiety disorder, panic disorder [PD] and alcohol abuse) across sworn and civilian police employees in Canada.

Methods

Our study analysed a subset of data collected from a cross-sectional survey of PSP in Canada. Details of the original data collection are described elsewhere [2,3]. In brief, survey participation was solicited through e-mails to currently serving PSP employed as correctional workers and officers, firefighters, paramedics, police officers and public safety communications officials (e.g. call centre operators/dispatchers). Data were collected in English or French using web-based self-report survey methods. The survey included validated screening tools of mental health disorder symptoms with evidence of diagnostic discriminant validity. In addition, the Depression, Anxiety and Stress Scale-21 (DASS-21) was included to assess symptom severity. Potential participants were directed to a website where they were provided with study details and given a unique computer-generated random code that allowed for repeated entry into the survey to facilitate their participation. Participants were not required to answer any question in order to proceed through the survey. However, participants were asked to confirm that questions left unanswered were done so intentionally. The survey was launched on 1 September 2016 and PSP could participate until 31 January 2017. The present study examined data from individuals identifying as sworn federal RCMP, sworn members of municipal and provincial police services (i.e. 'police') and the civilians who work within the police services (i.e. 'civilians').

Indications of mental disorder(s) and symptom severity were assessed using the validated self-report screening tools described below. However, screening tools alone are not diagnostic. A 'positive screen' on any of the tools indicates that an individual has self-reported symptoms in a fashion consistent with persons who have been diagnosed with a given disorder. Individuals would need to be evaluated by a trained clinician to determine diagnostically the presence or absence of a specific mental disorder.

A positive screen for PTSD was assessed using the PTSD Check List 5 (PCL-5) [16]. The PCL-5 is a commonly used 20-item self-report tool that assesses the 20 symptoms of PTSD outlined in the Diagnostic and Statistical Manual of Mental Disorder, fifth edition [17]. Participants rate how bothersome the 20 items are to them on a scale of 0 (not at all) to 4 (extremely). Individuals were considered to have a positive screen if they met minimum criteria on each PTSD cluster and had a total score >32 on the PCL-5.

A positive screen for MDD was assessed using the nine-item Patient Health Questionnaire (PHQ-9) [18]. The PHQ-9 asks individuals to consider the past 2 weeks and to rate nine symptoms of depression on a scale of 0 (not at all) to 3 (nearly every day). A positive screen for MDD is indicated if five of the nine items are rated at least a 2 or 3, or if the two questionnaire items: 'little interest or pleasure in doing things' and 'feeling down, depressed or hopeless' are rated 2 or 3.

A positive screen for PD symptoms was assessed using the Panic Disorder Symptoms Severity Scale (PDSS) [19]. The PDSS is a seven-item severity scale where items are scored on a five-point scale from 0 to 4. The measure was designed to rate the overall severity of PD symptoms, and a cut-off score of 9 or above indicates a positive screen for PD.

A positive screen for GAD was assessed using the seven-item GAD Scale (GAD-7) [20]. The GAD-7 is a seven-item questionnaire where individuals are asked to rate how often symptoms of anxiety, such as feeling nervous, anxious or on edge, have bothered them on a scale of 0 (not at all) to 3 (nearly every day). Responses are summed and a cut-off score of 9 or above indicates a positive screen for GAD.

A positive screen for social anxiety disorder (SAD) was assessed using the Social Interaction Phobia Scale (SIPS) [21]. The SIPS is a 14-item measure of social anxiety symptoms that can be divided into three subscales: Social Interaction Anxiety, Fear of Overt Evaluation and Fear of Attracting Attention. Subscale scores and an overall score were calculated and assessed in this study, and a SIPS total score of >20 was considered a positive screen for SAD.

A positive screen for risky (hazardous) alcohol use was assessed using the Alcohol Use Disorders Identification Test (AUDIT) [22]. The AUDIT is consistent with ICD-10 definitions of alcohol dependence and harmful alcohol use. The AUDIT is a 10-item list of questions relating to an individual's drinking behaviour. Items are scored from 0 (no or never) to 4 (response depends on the question being asked). Responses are summed and a positive screen for risky alcohol use was a score >15.

The DASS-21 was included to measure broad symptoms of depression, anxiety and stress relative to general population data [23]. The DASS-21 items are scored from 0 (does not apply to me at all) to 3 (applies to me very much or most of the time) and summed for each subscale (depression, anxiety and stress). As per the scoring instructions, each symptom score was multiplied by 2, therefore a score of 0 was the lowest possible score on any given subscale and 42 was the highest.

Participants reported their symptoms in the timeframe per the instructions for each scale: PCL-5, past month; MDD, past 14 days; PDSS, past 7 days; GAD-7, past 14 days; SIPS, currently, no specific time window; AUDIT, past year and DASS-21, past 7 days.

Participants were also asked to report on past-year and lifetime suicidal ideation, planning and attempts using a series of yes/no questions intentionally aligned with precedent suicide items from Statistics Canada [24]. Suicidal ideation was assessed by asking 'have you ever contemplated suicide?'; 'has this happened in the past 12 months?'; suicidal planning was assessed by asking 'have you ever made a serious plan to attempt suicide?'; 'has this happened in the past 12 months?'; and suicide attempts were assessed by asking 'have you ever attempted suicide?'; 'did this happen in the past 12 months?' Due to limited participant responses for past-year suicidal behaviours, the current analyses only considered lifetime suicidal ideation, plans and attempts for RCMP, police and civilian participants.

All data were collected electronically and entered into SPSS v.24 (IBM Corp.) for analysis. Missing data were treated as missing and statistical significance was set as $P < 0.05$. Demographic information, such as age, gender, and mental health questionnaire scores were described using means, frequencies, percentages and standard deviations. Overall prevalence estimates of positive screens for each mental disorder were calculated using (where appropriate) the mean score and the established dichotomous cut-offs. Differences between scores on the mental health screening tools between sworn members of the RCMP and police services and the civilians working with them were calculated using Kruskal–Wallis analyses. Spearman's *rho* correlation coefficients were used to assess the relationship between symptom severity (as measured by the DASS) and scores on mental health screening tools and suicidal ideation, plans and attempts. A series of logistic regression calculations were then performed to assess the relationship between positive screens for mental health disorders and suicidal ideation, plans and attempts among sworn and civilian police employees, while controlling for age and gender.

The study was granted ethical approval by the University of Regina Institutional Research Ethics Board (File #2016-107). Prior to access to the survey, individuals indicated their willingness to participate by clicking 'I agree' at the end of an electronic study information letter.

Results

Our results are based on secondary data analysis of the 1936 sworn RCMP members, 1974 sworn police officers (municipal and provincial) and the 326 civilians working with them who responded to the larger PSP survey [2,3]. Civilians were grouped together irrespective of their affiliated police force. In Table 1 we provide the demographic information for the three study groups.

The frequency and percentage of individuals who screened positive for one or more of the assessed mental health disorder symptoms sets, as well as self-reported lifetime suicidal ideation, plans and attempts, are presented in Table 2. Between-group analyses of statistically significant differences in positive screens and suicidal contemplation, plans and ideation were identified through Kruskal–Wallis analyses.

In all cases there were statistically significant differences between the three groups with respect to positive screens and between groups with respect to suicidal contemplation and attempts. RCMP officers reported significantly higher rates of suicidal contemplation than other police, $P = 0.011$. Civilians reported significantly higher rates of suicide attempts than both sworn officer groups, $P = 0.001$. RCMP officers reported significantly higher positive screening rates than other police on measures of PTSD (PCL-5), $P < 0.001$; MDD (PHQ-9), $P = 0.001$; GAD (GAD-7), $P < 0.001$; SAD (SIPS), $P < 0.001$ and PD (PDSS), $P < 0.001$. Relative to sworn provincial and municipal police officers, civilians reported symptoms consistent with higher positive screening rates for SAD ($P < 0.01$). Groups did not differ in reported suicidal planning or on positive screens for risky drinking behaviour (AUDIT), $P > 0.05$.

As presented in Table 3, increasing symptom severity as measured on the DASS subscales of depression, anxiety and stress was significantly correlated with increasing scores on the mental health screening tools and suicidal ideation, plans and attempts among sworn and civilian police employees (in all cases $P < 0.001$).

Logistic regression was used to assess the relationship between suicidal ideation, plans and attempts and positive screens for mental disorders while controlling for gender and age. The odds ratios and 95% CI for suicidal ideation in RCMP, other police and civilians are

Table 1. Demographics of the study population, *n* (%)

Socio-demographic variable	RCMP	Other police	Civilians
Sex			
Male	1298 (76)	1354 (76)	76 (29)
Female	406 (24)	437 (24)	190 (71)
Age			
18–29	81 (5)	60 (3)	22 (8)
30–39	489 (29)	460 (26)	58 (21)
40–49	668 (39)	812 (45.5)	70 (26)
50–59	405 (24)	419 (23.5)	101 (37)
≥60	51 (3)	34 (2)	21 (8)
Marital status			
Married/common law	1308 (77)	1429 (81)	170 (65)
Single	144 (8)	122 (7)	42 (16)
Separated/divorced/widowed	167 (10)	195 (11.0)	41 (16)
Re-married	72 (4)	28 (2)	8 (3)
Province of residence			
Western Canada (BC, AB, SK, MB)	1091 (60)	771 (40)	116 (39)
Eastern Canada (ON, QC)	284 (16)	954 (50)	122 (41)
Atlantic Canada (PEI, NS, NB, NFL)	369 (20)	185 (10)	56 (19.0)
Northern Territories (YK, NWT, NVT)	76 (4)	0	1 (0.3)
Ethnicity			
White	1491 (87)	1642 (92)	242 (90)
Other	217 (13)	140 (8)	28 (10)
Education			
High school or less	183 (11)	113 (6.5)	32 (12)
Some post-secondary (<4-year college/university programme)	837 (50)	884 (51)	147 (56)
University degree/4-year college or higher	665 (39)	664 (43)	84 (32)
Years of service (mean, standard deviation)	19.33 (11)	19.69 (10)	18.24 (12)

presented in Table 4, while the same results for suicidal planning and attempts are presented in Tables 5 and 6, respectively. When controlling for age and gender, the odds of suicidal ideation increases significantly ($P < 0.001$) for sworn RCMP, provincial and municipal police officers who screened positive for any mental disorder screenings and risky drinking (Table 4). For civilian police employees, increased odds in suicidal ideation was significantly associated with positive screens for PTSD (OR = 4.475, CI 1.497–13.381, $P < 0.01$). Provincial and municipal police officers were over 11 times at greater risk of suicidal ideation when screening positive for MDD with the PHQ-9 (OR = 11.791, CI 7.032–19.772, $P < 0.001$).

When controlling for age and gender, the odds of suicidal planning increases significantly for sworn RCMP, provincial and municipal police officers who screened positive for MDD, PTSD or PD (Table 5). Police who screened positive for SAD were also at increased odds for suicidal planning (OR = 2.029, CI 1.087–3.788). When controlling for age and gender, the odds of a suicide attempt significantly increased for RCMP officers with higher scores for PTSD (OR = 4.346, CI 1.589–11.886, $P < 0.01$) (Table 6). However, none of the mental disorder

Table 2. Frequency and per cent of individuals who screen positive for symptoms of the following mental health disorders according to screening tools used

	RCMP	Other police	Civilians
	n (%)	*n* (%)	*n* (%)
PTSD (PCL-5)	381 (29.2)	244 (18.0)	50 (24.6)
Depression (PHQ-9)	138 (11.1)	91 (7.0)	13 (6.4)
Anxiety (GAD-7)	285 (23.5)	182 (14.4)	42 (21.2)
Social anxiety disorder (SIPS)	216 (18.1)	121 (9.7)	40 (20.4)
Panic disorder (PDSS)	180 (15.8)	95 (8.0)	26 (14.4)
Risky alcohol use (AUDIT)	44 (4.4)	71 (6.5)	7 (4.4)
Ever contemplated suicide	289 (25.7)	249 (20.5)	42 (22.7)
Ever made a plan to attempt suicide	120 (6.2)	103 (5.2)	23 (7.1)
Ever attempted suicide	26 (1.3)	19 (1.0)	11 (3.4)

PTSD = post-traumatic stress disorder; PCL-5 = Post-traumatic Stress Disorder Checklist for DSM-5; PHQ-9 = Patient Health Questionnaire; GAD-7 = Generalized Anxiety Disorder Scale; SIPS = Social Interaction Phobia Scale; PDSS = Panic Disorder Symptoms Severity Scale; AUDIT = Alcohol Use Disorders Identification Test.

screening tools were significantly associated with suicide attempts among sworn or civilian police employees.

Discussion

The current study results provide evidence of statistically significant differences in the prevalence of (i) positive screens for mental disorders, (ii) symptom severity and (iii) suicidal ideation and attempts between sworn and civilian police workers in Canada. The results indicate a strong association between positive screens for all assessed mental disorders and significantly increased odds of suicidal ideation among sworn officers. In addition, sworn officers who scored higher on measures of PTSD were significantly more likely to report one or more lifetime suicide attempts (Table 6). Civilian police workers were more likely to report a lifetime suicide attempt than sworn officers and were at increased odds for reporting suicidal ideation when screening positive for PTSD.

Subjective self-reported symptoms of depression, anxiety and stress (as measured by the DASS-21) were highly correlated with mental disorder symptoms and positive screenings for mental disorders. Early interventions may help people who experience greater levels of stress [25] and due to stigma PSP may be more likely to minimize symptom reporting [26]; accordingly, where possible, available prevalence and normative data specific to PSP should inform persons evaluating PSP mental health, who should also carefully consider the possibility of symptom minimization.

Attempted suicide may develop through three steps: (i) feelings of pain and hopelessness leading to suicidal ideation, (ii) low or absent interconnectedness with others driving suicidal planning and (iii) capacity to die by suicide as a result of dispositional (i.e. nature or inherent) and habitual (i.e. access to weapons, knowing how to effectively end one's life) risk factors [11–13]. Feelings of hopelessness may be particularly pervasive for civilian police employees due to indirect exposure to potentially psychologically traumatic events and an inability to directly intervene based on their support role. Integrating effective resilience and coping-based occupational training programmes tailored to the unique occupational roles of sworn and civilian employees could help reduce the severity of mental disorder symptoms and risk for suicidal ideation, plans and subsequent attempts [27].

Limitations of our study results are reflected in previous investigations of the dataset (see Refs [2,3,28,29]), including self-selection of respondents who may not be representative samples of sworn and civilian police workers, and the absence of a clinical diagnosis possible from online screening. Despite the anonymous nature of the survey, clinical symptoms may be underreported among PSP due to the stigma associated with mental

Table 3. Spearman correlation coefficients (*rho*) between severity of illness measure (DASS-21), scores on screening tools for mental health disorders and suicide for all participants

Mental health disorder screening measure	DASS depression	DASS anxiety	DASS stress
PTSD (PCL-5)	0.728***	0.716***	0.712***
Anxiety (GAD-7)	0.803***	0.759***	0.796***
Depression (PHQ-9)	0.845***	0.798***	0.807***
Panic disorder (PDSS)	0.613***	0.589***	0.633***
Social anxiety (SIPS)	0.570***	0.578***	0.542***
Risky alcohol use (AUDIT)	0.141***	0.151***	0.140***
Ever contemplated suicide	0.327***	0.304***	0.312***
Ever made a plan to attempt suicide	0.170***	0.156***	0.153***
Ever attempted suicide	0.074	0.086*	0.059

PTSD = post-traumatic stress disorder; PCL-5 = Post-traumatic Stress Disorder Checklist for DSM-5; PHQ-9 = Patient Health Questionnaire; GAD-7 = Generalized Anxiety Disorder Scale; SIPS = Social Interaction Phobia Scale; PDSS = Panic Disorder Symptoms Severity Scale; AUDIT = Alcohol Use Disorders Identification Test; DASS = Depression, Anxiety and Stress symptoms; DASS-21 = Depression, Anxiety and Stress Scale—21 items.
*$P < 0.05$; ***$P < 0.001$.

Table 4. Odds ratios and 95% CI of differences in suicidal ideation for individuals with positive symptoms of mental disorders, controlling for age and gender

Mental health disorder screening measure	RCMP Odds ratio (95% CI)	Other police Odds ratio (95% CI)	Civilians Odds ratio (95% CI)
PCL-5	3.788*** (2.820–5.088)	4.366*** (3.138–6.075)	4.475** (1.497–13.381)
GAD-7	3.813*** (2.806–5.180)	3.586*** (2.544–5.055)	2.684 (0.919–7.838)
PHQ-9	5.333*** (3.565–7.978)	11.791*** (7.032–19.772)	3.027 (0.593–15.443)
PDSS	4.458*** (3.118–6.372)	4.300*** (2.777–6.659)	2.918 (0.745–11.426)
SIPS	3.498*** (2.515–4.865)	4.145*** (2.802–6.131)	1.149 (0.357–3.702)
AUDIT (risky drinking)	2.061* (1.068–3.979)	2.720*** (1.594–4.642)	1.107 (0.107–11.455)

PCL-5 = Post-traumatic Stress Disorder Checklist for DSM-5; PHQ-9 = Patient Health Questionnaire; GAD-7 = Generalized Anxiety Disorder Scale; SIPS = Social Interaction Phobia Scale; PDSS = Panic Disorder Symptoms Severity Scale; AUDIT = Alcohol Use Disorders Identification Test.
*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

Table 5. Odds ratios and 95% CI of differences in suicidal planning for individuals with positive symptoms of mental disorders, controlling for age and gender

Mental health disorder screening measure	RCMP Odds ratio (95% CI)	Other police Odds ratio (95% CI)	Civilians Odds ratio (95% CI)
PCL-5	2.163** (1.304–3.587)	2.312** (1.356–3.944)	0.182 (0.014–2.366)
GAD-7	1.456 (0.886–2.391)	1.655 (0.946–2.895)	0.298 (0.023–3.895)
PHQ-9	2.042* (1.161–3.591)	3.740*** (1.943–7.198)	0.106 (0.004–2.625)
PDSS	3.097*** (1.774–5.406)	2.196* (1.102–4.374)	0.398 (0.036–4.431)
SIPS	1.225 (0.726–2.066)	2.029* (1.087–3.788)	0.050 (0.001–1.904)
AUDIT (risky drinking)	1.521 (0.547–4.230)	0.603 (0.234–1.555)	NC

PCL-5 = Post-traumatic Stress Disorder Checklist for DSM-5; PHQ-9 = Patient Health Questionnaire; GAD-7 = Generalized Anxiety Disorder Scale; SIPS = Social Interaction Phobia Scale; PDSS = Panic Disorder Symptoms Severity Scale; AUDIT = Alcohol Use Disorders Identification Test; NC = number too small to compute.
*$P < 0.05$; **$P < 0.01$; ***$P < 0.001$.

Table 6. Odds ratios and 95% CI of differences in suicide attempts for individuals with positive symptoms of mental disorders, controlling for age and gender

Mental health disorder screening measure	RCMP Odds ratio (95% CI)	Other police Odds ratio (95% CI)	Civilians Odds ratio (95% CI)
PCL-5	4.346** (1.589–11.886)	1.804 (0.723–4.505)	1.161 (0.174–7.737)
GAD-7	1.086 (0.434–2.716)	1.123 (0.415–3.042)	0.134 (0.013–1.358)
PHQ-9	1.739 (0.649–4.662)	2.370 (0.891–6.304)	0.756 (0.043–13.404)
PDSS	2.278 (0.885–5.865)	1.704 (0.573–5.061)	0.543 (0.055–5.343)
SIPS	1.330 (0.512–3.457)	1.228 (0.418–3.604)	0.784 (0.076–8.099)
AUDIT (risky drinking)	2.117 (0.398–11.272)	2.584 (0.643–10.384)	NC

PCL-5 = Post-traumatic Stress Disorder Checklist for DSM-5; PHQ-9 = Patient Health Questionnaire; GAD-7 = Generalized Anxiety Disorder Scale; SIPS = Social Interaction Phobia Scale; PDSS = Panic Disorder Symptoms Severity Scale; AUDIT = Alcohol Use Disorders Identification Test; NC = number too small to compute.
**$P < 0.01$.

health disorders among police [29], even after exposure to mental health training [27].

Future researchers should consider clarifying whether the significant prevalence of positive mental disorder screens observed in sworn and civilian police workers is predominantly due to occupational exposures (e.g. responding to calls or managing stressful and potentially traumatic events from a civilian perspective) or other factors (e.g. personal relationships, pre-existing disorders) [14,28,29]. Our study results suggest strong associations between several mental health symptoms and suicidal ideation, plans and behaviour, all of which appear prevalent among police workers across various roles.

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Competing interests

The authors have no competing interests to declare.

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