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Associations Between Personality and Mental Health Among Royal Canadian Mounted Police Cadets

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Abstract

Royal Canadian Mounted Police (RCMP) report frequent exposures to diverse potentially psychological traumatic events (PPTEs) that can lead to symptoms of posttraumatic stress disorder (PTSD) and other mental health disorders. Personality traits may partially inform the substantial mental health challenges reported by serving RCMP. The current study examines associations between HEXACO personality factor and facet-level dimensions and mental health disorders of RCMP cadets starting the Cadet Training Program (CTP). RCMP cadets ($n = 772$) starting the CTP self-reported sociodemographics, personality, and mental health disorder symptoms. Emotionality was associated with MDD, GAD, and SAD (AORs ranged from 6.23 to 10.22). Extraversion and Agreeableness were inversely associated with MDD, GAD, and SAD (AORs ranged from 0.0159 to 0.43), whereas Openness to Experience was inversely associated with SAD (AOR = 0.36). Several facet-level personality dimensions were associated with mental health disorders. Inconsistent differences were observed between men and women for relationships between personality factors, facets, and positive screenings for mental disorders. The relationship patterns allude to possible risk and resilience factors associated with personality factors and facets. Early training, interventions, and resources tailored to cadet personality factors and facets might reduce risk and bolster mental health resilience.

Keywords HEXACO Personality Inventory · Posttraumatic stress injuries (PTSI) · Posttraumatic stress disorder (PTSD) · Police recruits · Public safety personnel

Introduction

Royal Canadian Mounted Police (RCMP) are regularly exposed to potentially psychologically traumatic events (PPTEs; i.e., direct or indirect exposures to actual or threatened death, serious injury, or sexual violence [CIPSRT 2021; American Psychiatric Association 2022]). PPTEs can lead to posttraumatic stress disorder (PTSD) and other mental disorders (e.g., generalized anxiety disorder [GAD], major depressive disorder [MDD], social anxiety disorder [SAD], and panic disorder [PD]) (Carleton et al. 2019; Kilpatrick et al. 2009; APA 2022), collectively referred to as posttraumatic stress injuries (PTSI). The term PTSI is used as part of the *Federal Framework on PTSD Recognition and Support* by the Public Health Agency of Canada (Public Health Agency of Canada 2019) to broadly describe and destigmatize several mental disorder diagnoses that might follow PPTE exposures. Serving RCMP report frequent exposures to diverse PPTEs (Carleton et al. 2019) and approximately

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half (50.2%) screen positive for one or more PTSI, including PTSD (30%), MDD (31.7%), GAD (23.3%), SAD (18.7%), and PD (12.0%) (Carleton et al. 2018).

Research efforts to understand risk and resilience profiles for developing PTSI have included work focused on identifying associations between mental health disorders and specific personality traits. The predisposition model of personality and mental disorders posits that personality is distinct from psychopathology but plays a casual role in psychopathology development (Klein et al. 2011). Personality traits may contribute to individual cognitive, emotional, and behavioral differences that potentiate risk for developing PTSI (McCrae and Terrancciano 2005). Neuroticism—the propensity to experience negative emotions—has been shown to prospectively predict PTSD following a PPTE exposure (Ogle et al. 2017) and is associated with increased PTSD symptom severity (Mattson et al. 2018). Elevated levels of neuroticism have also been longitudinally associated with MDD (Hakulinen et al. 2015; Hayward et al. 2013) and cross-sectionally associated with MDD, GAD (Kotov et al. 2010; Bienvenu et al. 2004; Rosellini and Brown 2011), PD (Bienvenu et al. 2004), and SAD (Costache et al. 2020).

MDD has also been associated with low Conscientiousness (i.e., the tendency to be unconcerned with orderly surroundings, avoid difficult tasks, and make decisions on impulse or with little reflection) and low Extraversion (i.e., the propensity to feel indifferent to social activities, and feel more awkward, less lively and optimistic than others do; Kotov et al. 2010; Rosellini and Brown 2011). Low Extraversion has also been associated with SAD (Costache et al. 2020), GAD, and MDD (Bienvenu et al. 2004; Rosellini et al. 2011). Agreeableness (i.e., the tendency to be cooperative and friendly) and Openness to Experience (i.e., the tendency to be intellectually curious, imaginative, and sensitive to beauty) have evidenced mixed associations with mental health with relatively smaller effect sizes (Afshar et al. 2015; Bienvenu et al. 2001, 2004; Kaplan et al. 2015; Rosellini and Brown 2011). Taken together, personality vulnerabilities, particularly high neuroticism and low conscientiousness and extraversion, appear to confer risk for common PTSIs.

Personality measurement is often used for police recruitment and selection processes (Varela et al. 2004). The RCMP currently uses several strategies to provide information regarding potential psychopathology (Butcher, 2011; Butcher et al. 2001; Detrick et al. 2001) which is common practice among policing organizations (Weiss 2010). Choosing police officers who exhibit personality factors (i.e., Extraversion, Agreeableness, Openness to Experience) associated with positive overall job performance and reduced risk of psychological harm from job related stressors is also considered a necessary and crucial step for law enforcement agencies (Lough and von Treuer 2013). Police officers have been stated to have personality characteristics that bolster their mental health against the intense inherent occupational stressors (Salters-Pedneault et al. 2010).

Most research regarding police personality and mental health disorders has examined personality using the five-factor model of personality (FFM; i.e., Openness to Experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism) and focused on Neuroticism, occasionally including other higher-order traits (e.g., Extraversion), but not facet-level traits (i.e., facets). The HEXACO Model of Personality (Lee and Ashton 2018, 2009) measures six factors of personality (i.e., Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, Openness to Experience) as well as 25 facets (i.e., subcomponents of the personality factors), facilitating specific predictions about individuals (Lee and Ashton 2018). The HEXACO model includes the largest set of dimensions recovered across languages in lexical studies of personality structure (Ashton et al. 2014; Marcus et al. 2016). The HEXACO dimensions incorporate notable conceptual differences relative to the FFM, resulting in broader coverage of the personality space and less redundancy between dimensions (Thielmann et al. 2022). The HEXACO facets also allow for more specific links between personality and mental health disorders.

Previous police research including a FFM personality measure have examined physiological stress reactivity, occupational stress, or PTSD risk (Haisch and Meyers 2004; Garbarino et al. 2014; Salters-Pedneault et al. 2010). To our knowledge, there is no previous research examining associations between mental health disorders and the HEXACO model of personality among police or police cadets. The RCMP Longitudinal PTSD Study (i.e., the RCMP Study; Carleton et al. 2022) provides an opportunity to address several gaps in personality research regarding police cadets. The RCMP Study was designed to develop, deploy, and longitudinally assess a multimodal mental health solution that includes evidence-based biopsychological assessments and evidence-informed integrated cadet mental health training. The RCMP Study cadets completed a full survey assessing sociodemographics, mental disorder symptoms (e.g., PTSD, MDD, GAD, SAD, PD, and AUD), and environmental factors, as well as individual difference factors (e.g., the HEXACO Personality Inventory).

The current work was designed to examine the associations between HEXACO personality traits and mental health of RCMP cadets at the start of the Cadet Training Program (CTP); specifically, we examined associations between HEXACO personality traits, corresponding facet-level traits, and positive screenings for diverse PTSI. Associations were examined for the total sample and men and women

separately to assess for gender differences. The results can provide baseline evidence of associations between cadet personality and current mental health, which inform contentions regarding personality traits as meaningfully and differentially associated with mental health challenges among cadets before starting the CTP. High levels of Emotionality (i.e., the HEXACO factor most similar to Neuroticism from the FFM) were expected to be associated with PTSI, low Conscientiousness with MDD and GAD, and low Extraversion with MDD and SAD. No specific directional associations were hypothesized for the HEXACO facets. Differences in associations between personality and mental disorders were expected to be observed for personality factors that differ between men and women. For example, women cadets were reported to score higher on Honesty-Humility, Emotionality, and Conscientiousness, and lower on Agreeableness and Openness to Experience than cadet men (Andrews et al. 2023). No specific directional associations were hypothesized based on gender.

Methods

Procedure

Data were collected using a web-based self-report survey available in English or French as part of the RCMP Study. Full details on the RCMP Study appear in the associated protocol paper (Carleton et al. 2022). The 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 study was also approved through a Privacy Impact Assessment as part of the overall approval National Administrative Records Management System (NARMS; 201,611,123,286) and Public Services and Procurement Canada (PSPC; 201,701,491/M7594174191). The current work uses cross-sectional data collected from the Full Assessment administered at the national RCMP training headquarters in Regina, SK, Canada during the start of the CTP. Data were collected from cadets attending the CTP between May 2019 and October 2021. Participants were presented with study information and provided informed consent to participate. After consenting to participant, cadets were assigned a unique ID number to ensure confidentiality throughout the RCMP Study. To further protect confidentiality, sample sizes of less than 5 were not reported in the current work.

Data and Sample

Participants were RCMP cadets ($n = 772$) starting the 26-week CTP who chose to participate in the RCMP Study. CTP qualifications include being Canadian citizens or permanent residents, 19–57 years old, and able to fluently read, write, and speak either English or French (Hembroff and Krätzig 2020). Cadets must also meet several recruiting requirements, including security clearances, medical examinations, a polygraph test, and minimum physical standards. There were no conditions requiring exclusion of persons otherwise qualified for the CTP. A total of 1696 cadets were invited to participate in the RCMP Study as part of the standard training condition (Carleton et al. 2022). The final sample was a total of 772 cadets (Table 1). Participants were mostly male (72.0%), identifying as men (72.2%), White/Caucasian (78.8%), aged 19–29 years old (59.8%), single (47.2%), married or in common-law relationships (i.e., living with a person in a conjugal relationship for 12 continuous months) (42.9%), from Western Canada (i.e., British Columbia, Alberta, Saskatchewan, Manitoba) (52.8%), completed some post-secondary school (43.4%), and reported no previous PSP or CAF experience (60.1%).

Measures

Personality was assessed using the 100-item self-report HEXACO Personality Inventory-Revised (HEXACO-PI-R; Lee and Ashton 2009, 2018). The HEXACO-PI-R measures each of the six personality factors, Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). Each of the six HEXACO factor-level scales includes four facets-level scales, each measured using four items, for a total of 24 facets. A 25th facet-level scale, Altruism was added later, includes four items, and is an interstitial facet dividing across three factor-level scales, Honesty-Humility, Emotionality, and Agreeableness (Lee and Ashton 2018).

For all HEXACO-100 items, a 5-point Likert scale was used with response options ranging from 1 = strongly disagree to 5 = strongly agree. Within each facet level scale, between one and three of the four items are reversed-scored; within each factor level scale, between 7 and 10 of the 16 items are reversed scored. A scale score is computed as the average of responses across all items belonging to the scale after recoding reverse-scored items. Cronbach's alphas for the 100-item HEXACO inventory for the current sample were consistent with the extant literature (Lee and Ashton 2009): Honesty-Humility ($\alpha = 0.77$), Emotionality ($\alpha = 0.73$), Extraversion ($\alpha = 0.80$), Agreeableness ($\alpha = 0.81$), Conscientiousness ($\alpha = 0.77$), and Openness to Experience ($\alpha = 0.85$).

Mental disorder symptoms were assessed by self-report using the PTSD Checklist for DSM-5 (PCL-5; Weathers et al. 2013a, b); the 9-item Patient Health Questionnaire (PHQ-9; Kroenke et al. 2001) indexing MDD symptoms; the Panic Disorder Symptoms Severity scale, Self-Report (PDSS-SR; Shear et al. 1997) indexing PD symptoms; the

Table 1 Participant sociodemographic information

	Demographic distribution % (*n*)[a]
Sex	
Male	72.0 (556)
Female	25.1 (194)
Gender	
Men	72.2 (557)
Women	24.6 (190)
Transgender	^
Non-binary	–
Two-spirit	^
Age	
19–29	59.8 (462)
30–39	28.0 (216)
40–49	6.3 (49)
50–59	0.6 (5)
60 and older	–
Ethnicity	
Asian	6.5 (46)
Black	3.4 (24)
First Nations/Inuit/Metis	3.2 (23)
Hispanic	1.5 (11)
South Asian	6.6 (47)
White/Caucasian	78.8 (565)
Marital Status	
Single	47.2 (364)
Separated/divorced	1.6 (12)
Married/common-law	42.9 (331)
Widowed	–
Province	
Western Canada	52.8 (408)
Eastern Canada	34.6 (267)
Atlantic Canada	11.3 (87)
Northern Territories	1.0 (8)
Education	
High school graduate or less	10.2 (79)
Some post-secondary school	43.4 (335)
University degree/4-year college or higher	39.5 (305)
Previous PSP or military experience	
Yes	30.7 (237)
No	60.1 (464)
Total sample	100 (772)

Western Canada—Alberta, British Columbia, Manitoba, Saskatchewan; Eastern Canada—Ontario, Quebec; Atlantic Canada—New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island; Northern Territories—Nunavut, Northwest Territories, Yukon

[a]The *n*s may not sum to 772 due to non-response. - = n = 0; ^ = Sample size between 1 and 4, so data not presented

7-item Generalized Anxiety Disorder scale (GAD-7; Spitzer et al. 2006) indexing GAD symptoms; the Social Interaction Phobia Scale (SIPS; Carleton et al. 2009) indexing SAD symptoms; and the Alcohol Use Disorders Identification Test (AUDIT; Barbor et al. 1989) indexing AUD symptoms. Participants reported for the last year on the AUDIT, the past month for the PCL-5, the past 14 days for the PHQ-9 and GAD-7, and the past 7 days for the PDSS-SR. There was no specific time window used for SIPS. For the PCL-5, a positive screen required participants to report exposure to at least one LEC-5 item (Weathers et al. 2013) meet minimum DSM-5 (APA 2022) criteria for each PTSD symptom cluster subscale (e.g., intrusions, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity), and exceed the clinical cut-off of > 32 (Weathers et al. 2013a, b). A positive screen required the PHQ-9 total score to be > 9 (Manea et al. 2015), the PDSS-SR total score to be > 7 (Shear et al. 1997), the GAD total score to be > 9 (Swinson 2006), the SIPS total score to be > 20 (Carleton et al. 2009), and the AUDIT total score to be > 15 (Gache et al. 2005). At the start of training, cadets have reported positive screenings based on self-reported mental disorder symptoms for GAD (11.0%), MDD (6.6%), PD (1.6%), PTSD (2.7%), and SAD (3.6%) (Carleton et al., 2023).

Statistical Analyses

To evaluate the associations between HEXACO personality factors and corresponding facet-level traits and positive screening for diverse mental disorders, a series of multivariate logistic regression models were performed using the total sample, as well as men and women only samples. All models were adjusted for sociodemographic covariates (i.e., sex, gender, age, marital status, ethnicity, province of residence, education). All data were analyzed using SPSS v.28 Premium (IBM 2021, New York, NY, USA).

Results

Associations among HEXACO personality factor-level scales, facet-level scales, and positive screens for mental disorders for the total, men, and women samples are provided in Table 2, 3, and 4. There were several statistically significant ($p < 0.05$) relationships with factor-level variables and positive screenings for mental health disorder. For the total sample and for men and women separately, increased Emotionality level was associated with increased odds of positive screens for MDD, GAD, and SAD (AORs ranged from 6.23 to 20.65; all *p*s < 0.01). For the total sample and for men only, the odds of screening positive for MDD, GAD, and SAD decreased as Extraversion and Agreeableness level increased (AORs ranged from 0.0116 to 0.43; all *p*s < 0.01); in contrast, for women, increased Extraversion was associated with decreased odds of positive screens for SAD only

Table 2 Relationship between HEXACO personality and positive screens for mental disorders at the start of CTP for the total sample ($N = 772$)

HEXACO-100	Posttraumatic stress disorder	Major depressive disorder	Generalized anxiety disorder	Social anxiety disorder	Panic disorder
	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]
Factor-level scales					
Honesty-Humility	0.72 [0.22, 2.30]	0.69 [0.35, 1.35]	0.64 [0.36, 1.13]	0.48 [0.19, 1.22]	0.62 [0.11, 3.55]
Emotionality	2.67 [0.71, 10.02]	10.22 [4.36, 23.93]***	6.23 [3.11, 12.48]***	6.70 [2.28, 9.64]***	2.47 [0.38, 16.26]
Extraversion	0.41 [0.14, 1.28]	0.25 [0.13, 0.48]***	0.43 [0.26, 0.73]**	0.0159 [0.00, 0.07]***	0.15 [0.02, 1.13]
Agreeableness	0.57 [0.19, 1.72]	0.39 [0.20, 0.74]**	0.35 [0.20, 0.63]***	0.23 [0.09, 0.61]**	0.81 [0.15, 4.33]
Conscientiousness	0.42 [0.12, 1.53]	0.63 [0.31, 1.32]	0.90 [0.49, 1.66]	0.43 [0.15, 1.20]	0.81 [0.16, 4.12]
Openness to experience	1.90 [0.70, 5.17]	1.60 [0.89, 2.87]	1.45 [0.89, 2.36]	0.36 [0.15, 0.86]*	0.40 [0.08, 2.11]
Facet-level scales					
(Honesty-Humility)					
Sincerity	0.52 [0.23, 1.19]	0.84 [0.53, 1.34]	0.83 [0.56, 1.23]	0.58 [0.30, 1.14]	0.43 [0.12, 1.54]
Fairness	0.70 [0.29, 1.66]	0.56 [0.35, 90]*	0.71 [0.46, 1.08]	0.72 [0.35, 1.46]	1.54 [0.45, 5.35]
Greed Avoidance	1.37 [0.68, 2.76]	0.99 [0.68, 1.44]	0.79 [0.58, 1.08]	0.68 [0.42, 1.11]	1.50 [0.63, 3.60]
Modesty	0.94 [0.39, 2.25]	0.94 [0.57, 1.56]	0.99 [0.65, 1.52]	0.72 [0.35, 1.47]	0.68 [0.18, 2.64]
(Emotionality)					
Fearfulness	0.90 [0.36, 2.25]	1.36 [0.80, 2.30]	1.23 [0.79, 1.91]	1.75 [0.85, 3.60]	1.80 [0.45, 7.22]
Anxiety	1.96 [0.90, 4.25]	5.32 [3.14, 9.03]***	5.42 [3.42, 8.57]***	7.26 [3.35, 15.74]***	2.36 [0.60, 9.31]
Dependence	1.15 [0.47, 2.82]	1.90 [1.14, 3.16]*	1.68 [1.10, 2.57]*	1.55 [0.78, 3.09]	1.82 [0.54, 6.18]
Sentimentality	2.66 [0.95, 7.44]	2.83 [1.59, 5.03]***	1.53 [0.99, 2.37]	1.26 [0.63, 2.52]	0.79 [0.24, 2.56]
(Extraversion)					
Social Self-Esteem	0.16 [0.06, 0.41]***	0.16 [0.10, 0.29]***	0.34 [0.22, 0.52]***	0.089 [0.04, 0.20]***	0.060 [0.01, 0.64]*
Social Boldness	0.73 [0.36, 1.47]	0.85 [0.56, 1.29]	0.86 [0.61, 1.21]	0.17 [0.08, 0.34]***	1.00 [0.42, 2.41]
Sociability	1.33 [0.61, 2.89]	0.78 [0.51, 1.19]	0.93 [0.65, 1.34]	0.16 [0.08, 0.32]***	0.62 [0.19, 2.04]
Liveliness	0.66 [0.29, 1.51]	0.26 [0.16, 0.43]***	0.43 [0.29, 0.64]***	0.19 [0.10, 0.38]***	0.32 [0.10, 1.10]
(Agreeableness)					
Forgivingness	0.87 [0.40, 1.88]	0.54 [0.34, 0.86]**	0.71 [0.48, 1.04]	0.29 [0.15, 0.57]***	0.69 [0.21, 2.28]
Gentleness	1.24 [0.50, 3.04]	0.70 [0.42, 1.16]	0.64 [0.42, 0.97]*	0.59 [0.29, 1.17]	1.23 [0.33, 4.65]
Flexibility	0.47 [0.20, 1.06]	0.58 [0.36, 0.93]*	0.61 [0.41, 0.91]*	0.62 [0.31, 1.22]	1.02 [0.25, 4.19]
Patience	0.64 [0.28, 1.44]	0.63 [0.39, 0.99]*	0.51 [0.34, 0.75]***	0.45 [0.24, 0.86]*	0.75 [0.21, 2.66]
(Conscientiousness)					
Organization	0.54 [0.25, 1.19]	0.71 [0.46, 1.10]	0.91 [0.63, 1.31]	0.66 [0.35, 1.24]	0.60 [0.21, 1.73]
Diligence	0.63 [0.25, 1.62]	0.45 [0.26, 0.79]**	0.84 [0.53, 1.34]	0.39 [0.18, 0.83]	0.61 [0.17, 2.22]
Perfectionism	1.41 [0.54, 3.65]	1.19 [0.69, 2.06]	1.52 [0.96, 2.43]	1.18 [0.55, 2.57]	2.09 [0.57, 7.71]
Prudence	0.40 [0.16, 1.01]	1.07 [0.62, 1.85]	0.70 [0.45, 1.10]	0.52 [0.25, 1.10]	1.07 [0.28, 4.02]
(Openness to Experience)					
Aesthetic Appreciation	1.27 [0.64, 2.51]	1.12 [0.77, 1.64]	1.25 [0.91, 1.72]	0.65 [0.38, 1.11]	1.20 [0.44, 3.25]
Inquisitiveness	1.40 [0.70, 2.80]	1.41 [0.94, 2.11]	1.30 [0.93, 1.82]	0.62 [0.36, 1.07]	0.63 [0.20, 1.97]
Creativity	1.77 [0.87, 3.62]	1.25 [0.84, 1.85]	1.01 [0.73, 1.40]	0.64 [0.37, 1.10]	0.50 [0.18, 1.37]
Unconventionality	1.06 [0.43, 2.62]	1.34 [0.80, 2.24]	1.32 [0.85, 2.04]	0.50 [0.24, 1.07]	0.096 [0.01, 1.57]
(Interstitial Scale)					
Altruism	1.25 [0.47, 3.34]	1.50 [0.85, 2.66]	0.92 [0.58, 1.45]	0.37 [0.18, 0.77]**	0.55 [0.12, 2.48]

AOR odds ratio adjusted for sex, gender, age, ethnicity, province of residence, and education; *CI* confidence interval

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$: statistically significantly different

(AOR = 0.00160; $p < 0.01$). For the total sample, increased Openness to Experience level was associated with decreased odds of SAD (AOR = 0.36; $p < 0.05$); in contrast, for women, increased Openness to Experience was associated with increased odds of positive screens for PTSD, MDD, and GAD (AORs ranged from 2.96 to 8.81; all $ps < 0.05$).

There were several statistically significant ($p < 0.05$) relationships between facet-level variables and positive

Table 3 Relationship between HEXACO personality and positive screens for mental disorders at the start of CTP for men ($n = 557$)

HEXACO-100	Posttraumatic stress disorder	Major depressive disorder	Generalized anxiety disorder	Social anxiety disorder	Panic disorder
	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]
Factor-level scales					
Honesty-Humility	0.71 [0.14, 3.64]	0.79 [0.33, 1.89]	0.78 [0.38, 1.59]	0.45 [0.12, 1.67]	0.060 [0.00, 7.07]
Emotionality	4.57 [0.60, 34.63]	16.70 [5.00, 55.78]***	9.13 [3.59, 23.26]***	8.38 [1.90, 36.89]**	1.44 [0.064, 32.38]
Extraversion	0.48 [0.11, 2.23]	0.196 [0.08, 0.48]***	0.320 [0.16, 0.64]***	0.0125 [0.00, 0.09]***	0.179 [0.01, 2.71]
Agreeableness	0.47 [0.09, 2.40]	0.316 [0.13, 0.76]**	0.279 [0.13, 0.59]***	0.116 [0.03, 0.44]**	0.0140 [0.00, 2.94]
Conscientiousness	0.62 [0.11, 3.69]	0.45 [0.18, 1.14]	0.67 [0.31, 1.42]	0.277 [0.07, 1.11]	0.00290 [0.00, 6.64]
Openness to Experience	0.79 [0.15, 4.11]	1.06 [0.48, 2.38]	1.08 [0.58, 2.04]	0.393 [0.13, 1.20]	-
Facet-level scales					
(Honesty-Humility)					
Sincerity	0.72 [0.21, 2.45]	0.93 [0.49, 1.75]	1.03 [0.62, 1.69]	0.50 [0.21, 1.24]	0.287 [0.03, 3.21]
Fairness	0.70 [0.22, 2.23]	0.55 [0.31, 1.00]	0.71 [0.43, 1.20]	0.95 [0.36, 2.52]	0.62 [0.09, 4.40]
Greed Avoidance	1.20 [0.43, 3.27]	1.04 [0.62, 1.74]	0.80 [0.53, 1.21]	0.61 [0.29, 1.28]	0.00296 [0.00, 8.88]
Modesty	0.71 [0.21, 2.48]	1.19 [0.61, 2.32]	1.16 [0.69, 1.95]	0.69 [0.28, 1.66]	0.330 [0.04, 3.13]
(Emotionality)					
Fearfulness	0.65 [0.17, 2.43]	1.60 [0.81, 3.14]	1.22 [0.71, 2.09]	1.55 [0.59, 4.03]	2.13 [0.17, 26.42]
Anxiety	1.46 [0.48, 4.39]	5.42 [2.72, 10.81]***	6.55 [3.61, 11.87]***	9.22 [3.30, 25.72]***	4.19 [0.49, 35.97]
Dependence	1.79 [0.47, 6.75]	1.90 [0.91, 3.94]	1.83 [1.03, 3.25]*	1.86 [0.69, 5.03]	0.95 [0.07, 12.15]
Sentimentality	9.85 [1.79, 54.37]**	3.84 [1.74, 8.48]***	1.92 [1.08, 3.42]*	1.06 [0.43, 2.58]	0.259 [0.03, 2.17]
(Extraversion)					
Social Self-Esteem	0.258 [0.07, 0.94]*	0.251 [0.13, 0.50]***	0.345 [0.20, 0.59]***	0.066 [0.02, 0.20]***	0.306 [0.04, 2.69]
Social Boldness	1.20 [0.40, 3.64]	0.62 [0.33, 1.17]	0.69 [0.43, 1.11]	0.205 [0.08, 0.52]***	0.203 [0.02, 2.15]
Sociability	0.78 [0.28, 2.21]	0.66 [0.37, 1.17]	0.84 [0.53, 1.33]	0.104 [0.04, 0.29]***	0.77 [0.12, 4.99]
Liveliness	0.61 [0.19, 1.97]	0.238 [0.12, 0.48]***	0.293 [0.17, 0.50]***	0.139 [0.06, 0.35]***	0.238 [0.03, 1.88]
(Agreeableness)					
Forgivingness	1.28 [0.44, 3.72]	0.388 [0.20, 0.75]**	0.56 [0.34, 0.91]*	0.128 [0.05, 0.35]***	0.064 [0.00, 2.98]
Gentleness	0.39 [0.10, 1.59]	0.61 [0.30, 1.25]	0.66 [0.37, 1.17]	0.353 [0.13, 0.99]*	0.334 [0.02, 5.58]
Flexibility	0.44 [0.13, 1.43]	0.71 [0.38, 1.30]	0.59 [0.36, 0.97]*	0.63 [0.26, 1.50]	0.62 [0.05, 7.48]
Patience	0.77 [0.24, 2.51]	0.54 [0.30, 0.98]*	0.46 [0.28, 0.77]**	0.42 [0.18, 0.95]*	0.0364 [0.00, 2.31]
(Conscientiousness)					
Organization	0.62 [0.20, 1.98]	0.58 [0.31, 1.06]	0.72 [0.44, 1.16]	0.55 [0.23, 1.29]	0.091 [0.00, 2.86]
Diligence	0.95 [0.22, 4.09]	0.41 [0.19, 0.89]*	0.68 [0.37, 1.23]	0.150 [0.05, 0.45]***	0.43 [0.05, 3.48]
Perfectionism	1.38 [0.34, 5.66]	0.88 [0.43, 1.82]	1.57 [0.86, 2.87]	0.91 [0.33, 2.53]	0.26 [0.02, 3.03]
Prudence	0.49 [0.13, 1.93]	0.86 [0.43, 1.72]	0.60 [0.35, 1.03]	0.64 [0.25, 1.65]	0.122 [0.01, 2.92]
(Openness to Experience)					
Aesthetic Appreciation	1.35 [0.49, 3.75]	1.05 [0.62, 1.77]	1.06 [0.70, 1.60]	0.75 [0.37, 1.54]	0.043 [0.00, 1.67]
Inquisitiveness	0.83 [0.34, 2.03]	1.11 [0.65, 1.88]	1.05 [0.69, 1.59]	0.56 [0.28, 1.13]	0.00359 [0.00, 10.24]
Creativity	1.15 [0.37, 3.63]	0.98 [0.55, 1.77]	0.83 [0.52, 1.32]	0.62 [0.28, 1.41]	0.099 [0.00, 3.31]
Unconventionality	0.388 [0.10, 1.50]	0.96 [0.47, 1.98]	1.38 [0.79, 2.41]	0.47 [0.17, 1.26]	0.00046 [0.00, 19.00]
(Interstitial Scale)					
Altruism	1.03 [0.27, 3.96]	1.61 [0.77, 3.39]	0.87 [0.49, 1.54]	0.328 [0.12, 0.89]*	0.184 [0.01, 2.33]

AOR odds ratio adjusted for sex, gender, age, ethnicity, province of residence, and education; *CI* confidence interval

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$: statistically significantly different

Table 4 Relationship between HEXACO personality and positive screens for mental disorders at the start of CTP for women ($n = 190$)

HEXACO-100	Posttraumatic stress disorder	Major depressive disorder	Generalized anxiety disorder	Social anxiety disorder	Panic disorder
	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]	AOR [95% CI]
Factor-level scales					
Honesty-Humility	0.55 [0.07, 4.11]	0.43 [0.14, 1.32]	0.53 [0.19, 1.44]	0.327 [0.07, 1.56]	1.89 [0.06, 56.60]
Emotionality	0.44 [0.06, 3.24]	8.10 [1.99, 32.93]**	8.80 [2.37, 32.70]***	20.65 [2.16, 197.62]**	1.62 [0.087, 30.37]
Extraversion	0.51 [0.08, 3.25]	0.376 [0.14, 1.04]	0.59 [0.25, 1.42]	0.000160 [0.00, 0.06]**	0.189 [0.01, 3.45]
Agreeableness	0.89 [0.17, 4.69]	0.56 [0.20, 1.59]	0.63 [0.25, 1.63]	0.56 [0.13, 2.43]	12.63 [0.24, 664.02]
Conscientiousness	0.42 [0.05, 3.71]	1.31 [0.39, 4.46]	1.22 [0.43, 3.45]	0.73 [0.14, 3.88]	6.15 [0.38, 99.35]
Openness to Experience	8.81 [1.21, 64.30]*	3.67 [1.29, 10.46]*	2.96 [1.19, 7.33]*	0.320 [0.07, 1.42]	0.93 [0.08, 11.45]
Facet-level scales					
(Honesty-Humility)					
Sincerity	0.40 [0.09, 1.79]	0.73 [0.33, 1.61]	0.63 [0.31, 1.26]	0.44 [0.13, 1.50]	0.321 [0.04, 2.39]
Fairness	1.24 [0.22, 7.16]	0.68 [0.30, 1.56]	0.74 [0.34, 1.61]	0.51 [0.17, 1.56]	18.92 [1.11, 323.14]*
Greed Avoidance	1.08 [0.39, 3.05]	0.85 [0.50, 1.46]	0.85 [0.52, 1.39]	0.71 [0.35, 1.46]	4.35 [0.74, 25.44]
Modesty	1.07 [0.26, 4.40]	0.47 [0.19, 1.14]	0.84 [0.38, 1.85]	0.66 [0.19, 2.36]	1.64 [0.12, 22.37]
(Emotionality)					
Fearfulness	0.68 [0.11, 4.07]	1.05 [0.41, 2.66]	1.69 [0.72, 3.98]	3.61 [0.89, 14.65]	0.62 [0.08, 4.88]
Anxiety	1.71 [0.46, 6.43]	7.27 [2.69, 19.65]	6.49 [2.67, 15.78]***	9.46 [2.17, 41.23]**	1.80 [0.10, 32.63]
Dependence	0.184 [0.04, 0.85]*	1.52 [0.69, 3.33]	1.87 [0.91, 3.82]	1.47 [0.47, 4.60]	2.85 [0.44, 18.42]
Sentimentality	0.69 [0.19, 2.45]	2.61 [1.06, 6.46]*	1.57 [0.75, 3.28]	2.54 [0.74, 8.74]	0.46 [0.03, 7.46]
(Extraversion)					
Social Self-Esteem	0.0735 [0.01, 0.59]*	0.075 [0.03, 0.23]***	0.292 [0.13, 0.64]**	0.075 [0.02, 0.36]***	0.041 [0.00, 1.34]
Social Boldness	0.65 [0.22, 1.95]	1.46 [0.75, 2.81]	0.99 [0.58, 1.70]	0.083 [0.02, 0.37]***	0.85 [0.21, 3.46]
Sociability	1.45 [0.38, 5.54]	0.96 [0.48, 1.92]	1.14 [0.61, 2.15]	0.168 [0.05, 0.55]**	0.49 [0.09, 2.72]
Liveliness	1.04 [0.28, 3.94]	0.285 [0.13, 0.64]**	0.64 [0.33, 1.22]	0.270 [0.08, 0.87]*	0.480 [0.08, 2.82]
(Agreeableness)					
Forgivingness	1.14 [0.33, 2.93]	0.87 [0.40, 1.88]	1.04 [0.53, 2.07]	0.86 [0.29, 2.58]	10.11 [0.51, 202.11]
Gentleness	3.51 [0.73, 16.79]	0.80 [0.38, 1.68]	0.75 [0.38, 1.46]	0.96 [0.35, 2.66]	2.75 [0.26, 28.78]
Flexibility	0.41 [0.10, 1.76]	0.48 [0.21, 1.06]	0.72 [0.37, 1.42]	0.62 [0.21, 1.87]	1.40 [0.17, 11.81]
Patience	0.43 [0.09, 2.04]	0.90 [0.41, 1.96]	0.71 [0.34, 1.45]	0.62 [0.20, 1.92]	3.85 [0.25, 58.97]
(Conscientiousness)					
Organization	0.62 [0.19, 2.00]	0.99 [0.48, 2.04]	1.12 [0.60, 2.08]	0.78 [0.29, 2.05]	1.44 [0.34, 6.14]
Diligence	1.55 [0.31, 7.69]	0.70 [0.28, 1.76]	1.05 [0.46, 2.39]	1.36 [0.37, 4.98]	2.81 [0.25, 31.37]
Perfectionism	0.84 [0.17, 4.05]	1.47 [0.61, 3.52]	1.29 [0.60, 2.75]	1.84 [0.53, 6.39]	-
Prudence	0.283 [0.05, 1.49]	1.49 [0.60, 3.73]	0.98 [0.42, 2.26]	0.353 [0.10, 1.25]	2.55 [0.34, 19.33]
(Openness to Experience)					
Aesthetic Appreciation	2.62 [0.76, 9.01]	1.66 [0.87, 3.16]	1.89 [1.05, 3.40]*	0.48 [0.19, 1.17]	2.09 [0.40, 10.90]
Inquisitiveness	4.89 [1.22, 19.68]*	2.21 [1.06, 4.58]*	1.97 [1.05, 3.68]*	0.74 [0.28, 1.94]	1.83 [0.34, 9.95]
Creativity	2.43 [0.68, 8.73]	1.58 [0.87, 2.86]	1.44 [0.85, 2.44]	0.64 [0.29, 1.42]	0.398 [0.08, 1.91]
Unconventionality	1.94 [0.48, 7.80]	1.95 [0.82, 4.63]	1.27 [0.59, 2.75]	0.69 [0.19, 2.49]	0.168 [0.00, 8.68]
(Interstitial Scale)					
Altruism	0.65 [0.12, 3.50]	1.25 [0.50, 3.13]	1.26 [0.56, 2.86]	0.342 [0.10, 1.21]	0.087 [0.00, 2.18]

AOR odds ratio adjusted for sex, gender, age, ethnicity, province of residence, and education; *CI* confidence interval

*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$: statistically significantly different

screenings for one or more mental health disorders. For the total sample, increased Fairness was associated with decreased odds of MDD (AOR = 0.56; $p < 0.05$). For women, Fairness was associated with increased odds of PD (AOR = 18.92; $p < 0.05$). For the total sample and for men, increased Anxiety was associated with increased odds of MDD, GAD, and SAD (AORs ranged from 5.32 to 9.22; all $ps < 0.001$). For women, increased Anxiety was associated with increased odds of GAD and SAD (AORs ranged from 6.49 to 9.46; all $ps < 0.01$). For the total sample, increased Dependence was associated with increased odds of MDD and GAD (AORs ranged from 1.68 to 1.90; all $ps < 0.05$). Associations between Dependence and increased odds of GAD (AOR = 1.83; $p < 0.05$) were observed for men, whereas for women, increased Dependence was associated with decreased odds of PTSD (AOR = 0.184; $p < 0.04$). For the total sample and for women, increased Sentimentality was associated increased odds of MDD (AORs ranged from 2.61 to 2.83; all $ps < 0.05$); in contrast, for men, increased Sentimentality was associated with increased odds of PTSD, MDD, and GAD (AORs ranged from 1.92 to 9.85; all $ps < 0.05$). For the total sample, as well as for men and women separately, the odds of all mental disorders (i.e., PTSD, MDD, GAD, and SAD) decreased as Social Self-Esteem increased (AORs ranged from 0.060 to 0.345; all $ps < 0.05$). For the total sample, as well as for men and women separately, increased Social Boldness and Sociability were associated with decreased odds of SAD (AORs ranged from 0.083 to 0.205; all $ps < 0.001$). For the total sample and for men, increased Liveliness was associated with decreased odds of MDD, GAD, and SAD (AORs ranged from 0.19 to 0.43; all $ps < 0.001$) and decreased odds of MDD and SAD (AORs ranged from 0.270 to 0.285; all $ps < 0.05$) for women. For the total sample and for men, increased Forgiveness was associated with decreased odds of MDD, SAD (AORs ranged from 0.128 to 0.54; all $ps < 0.01$), and GAD (AOR = 0.56; $p < 0.05$). For the total sample, increased Gentleness was associated with decreased odds of GAD (AOR = 0.64; $p < 0.05$), and for men increased Gentleness was associated with decreased odds of SAD (AOR = 0.353; $p < 0.05$). For the total sample, increased Flexibility was associated with decreased odds of MDD and GAD (AORs ranged from 0.58 to 0.61; all $ps < 0.05$), and for men increased Flexibility was associated with decreased odds of GAD (AOR = 0.59; $p < 0.05$). For the total sample and for men, increased Patience was associated with decreased odds of MDD, GAD, and SAD (AORs ranged from 0.42 to 0.63; all $ps < 0.05$). For the total sample, increased Diligence level was associated with decreased odds of MDD (AOR = 0.45; $p < 0.01$), and for men increased Diligence level was associated with decreased odds of MDD and SAD (AORs ranged from 0.150 to 0.41; all $ps < 0.05$). For men, increased Altruism was associated with decreased odds of SAD (AOR = 0.328; $p < 0.05$). For women, increased Aesthetic Appreciation was associated increased odds of GAD (AOR = 1.89; $p < 0.05$), and increased Inquisitiveness was associated with increased odds of PTSD, MDD, and GAD (AORs ranged from 1.97 to 4.89; all $ps < 0.05$).

Discussion

The current results provide novel evidence of associations between cadets' HEXACO personality factors, facets, and mental health disorders. The current results can also inform contentions that personality traits are meaningfully and differently associated with mental health, and identify specific personality factors and facets that may increase risk or resilience for mental health disorders. The current results may be useful in tailoring mental health interventions and training to target personality traits associated with increased mental health risk or to maintain and bolster personality traits associated with mental health resilience.

Honesty-Humility

Honesty-Humility was not statistically significantly associated with decreased odds of screening positive for mental health disorders despite the statistically significant decreased odds observed for Agreeableness. The Honest-Humility and Agreeableness factors of the HEXACO represent two complimentary aspects of reciprocal altruism (Ashton and Lee 2007). Honesty-Humility represents the tendency to cooperate with others, even though one might exploit them without suffering retaliation. The same tendency decreases opportunities for personal gains, but increases likeliness of cooperation from others. Agreeableness represents the tendency to cooperate with others despite the risk of being exploited by others. The same tendency increases opportunities for personal gains thru reciprocal cooperation with others, but also increasing risk of being exploited by others. The current results suggest Agreeableness may facilitate mental health resilience despite the increased vulnerability to exploitation while cooperating with others, while its remains unclear how Honesty-Humility relates to mental health risk or resilience. Further research is needed to understand the interaction between Honesty-Humility, Agreeableness, reciprocal altruism, and mental health challenges.

Emotionality

Partially consistent with expectations, high levels of Emotionality among RCMP cadets starting the CTP were associated with increased odds of screening positive for MDD, GAD, and SAD. This was observed for both cadet men and

women. Contrasting expectations, high Emotionality was not statistically significantly associated with PTSD. The results may be due to differences in the measurement of Anger between HEXACO Emotionality and FFM Neuroticism. Anger at the beginning of training has been predictive of PTSD after one year among police (Meffert et al. 2008). The HEXACO factor of Emotionality shares some content with the FFM Neuroticism (e.g., anxiety), but Emotionality lacks the anger-related aspects and instead contains sentimentality-related traits that are associated with the FFM Agreeableness (Ashton et al. 2014). The HEXACO assesses anger as the inverse of the facet Patience rather than within Emotionality, which may explain why Emotionality was not statistically significantly associated with increased odds of screening positive for PTSD; however, Agreeableness and the facet of Patience were also not associated with PTSD. Few Cadets in the current sample reported positive screenings for PTSD (2.7%) (Carleton et al., 2023), which may explain the absent association between Patience/Anger and PTSD. Further research is needed to examine the association between Patience/Anger and the development of PTSD over time, including and the possible role of exposures to PPTEs or other occupational stressors.

Emotionality includes the facets Anxiety, Fearfulness, Dependence, and Sentimentality (e.g., vulnerable, sensitive, anxious, and sentimental vs. fearless, tough, independent, and unemotional; Ashton and Lee 2007). Most facets of Emotionality (i.e., Anxiety, Dependence, and Sentimentality) were associated with increased odds of screening positive for mental health disorders (e.g., MDD, GAD, and SAD). The Anxiety facet assesses tendencies to worry across diverse contexts, with high scorers tending to become preoccupied by even relatively minor problems (Lee and Ashton 2009). Serving RCMP report experiencing a wide range of operational and organizational stressors, inherent and specific to the job, that cause substantial stress and are uniquely associated with screening positive for mental health disorders (Carleton et al. 2020). Associations between occupational stressors and mental health disorders may be further explained by the Emotionality facet of Anxiety. Persons with high Anxiety may worry more or become preoccupied by the specific stressors related to daily duties and tasks, which may increase risks for developing MDD, GAD, or SAD.

Persons scoring higher on Sentimentality have a tendency to feel strong emotional bonds and exhibit empathic sensitivity to the feelings of others (Lee and Ashton 2009). Police officers likely exhibit high levels of empathy when dealing with people experiencing stressors; however, serving RCMP have reported low levels of perceived social support (Vig et al. 2020), which may indicate insufficient emotional bonds, possibly because police can experience social isolation as a function of their responsibilities (Violanti et al. 2018). Social support has been reported to be protective against several mental health disorders for PSP, including serving RCMP (Vig et al. 2020) and cadets (Nisbet et al. 2023). The combination of high empathy and low social support may explain how sentimentality can present as a risk factor for MDD or GAD. When paired with high levels of Dependence (i.e., need for emotional support through disclosures of difficulties to supportive and comforting persons; Lee and Ashton 2009), the lack of perceived social support may further exacerbate mental health risk.

For men, increased Sentimentality was associated with increased odds for more mental health disorders (i.e., PTSD, MDD, and GAD) than for women (i.e., MDD only). Dependence was associated with increased odds for GAD for men, but associated with decreased odds for PTSD for women. The current results suggest that high levels of Emotionality and Sentimentality may increase risk for mental health challenges among men and women cadets but Dependence may increase risk for only cadet men. This may be due to women being more effective at meeting their needs related to Sentimentality and Dependence (i.e., building emotional bonds and being empathic) as women are often socialized to express emotions and seek support when needed (Marcus et al. 2016). Men may also experience more stigma around reporting mental health difficulties and seeking support due to hypermasculine attitudes embedded in police culture (Berg et al. 2006) which may further hinder Sentimental and Dependent behaviors.

Interventions focused on both empathy and building strong emotional bonds through social support may be needed to protect cadets, particularly men, with high Sentimentality and Dependence, while coping strategies for dealing with daily stressors may help those with high Anxiety. Nevertheless, cadets have previously reported lower Emotionality, Anxiety, Sentimentality, and Dependence than the general population (Andrews et al. 2023), implying mental health resilience towards daily stressors.

Extraversion

Consistent with expectations, high scores on Extraversion and related facets (i.e., Social Boldness, Sociability, Liveliness, and Social Self-Esteem; Ashton and Lee 2007) were associated with decreased odds for mental health disorder screens (i.e., MDD, GAD, SAD). Similar to Agreeableness, Extraversion may increase social networks through increased participation in social interactions, social connectedness (Srivastava 2008), and social activities (Harris et al. 2017; Asendorpf and Wilpers 1998), increasing resilience associated with social support (Vig et al. 2020). Social Self-Esteem, Social Boldness, Sociability, and Liveliness may enhance cadet capacities for performing regular duties (e.g., engaging and working with the public) by boosting cadet positive self-regard and confidence, and making cadets more

approachable to the public and their colleagues. The current results suggest high levels of Extraversion may increase mental health resilience.

Cross-sectional and longitudinal research has evidenced Social Self-Esteem and Self-Efficacy as associated with fewer PTSD symptoms of among firefighters (Heinrichs et al. 2005) and police recruits (Meffert et al. 2008). Social Self-Esteem and Self-Efficacy relate to individual feelings of agency, which may be positively associated with imposing meaning on PPTEs and fostering recovery (Heinrichs et al. 2005). Accordingly, Social Self-Esteem may facilitate resilience to the frequent and varied PPTE exposures experienced by RCMP. Sociability and Social Self-Esteem may also reduce the likelihood of cadets experiencing fear and anxiety in social situations and reduce the fear of scrutiny by others that is characteristic of SAD (APA 2022). High levels of Liveliness may facilitate optimism and enthusiasm in tough situations, therein decreasing the likelihood of experiencing depressed mood, or loss of interest or pleasure associated with MDD (APA 2022). Optimism and enthusiasm may also facilitate mental health resilience against daily stressors and reduce the worry and anxiety associated with GAD (APA 2022).

Training focused on increasing confidence, self-regard, and self-esteem in social contexts and improving public speaking or engagements skills may help to mitigate mental health challenges among police with low social self-esteem, sociability, and social boldness. Police low in Liveliness may benefit from early access to supports and resources to increase optimism and enthusiasm. Overall, RCMP Cadets already appear to score higher on Extraversion and all related facets than the general population (Andrews et al. 2023), suggesting a need to maintain and bolster such traits to further facilitate mental health resilience.

Agreeableness

High scores on Agreeableness and related facets (i.e., Forgivingness, Gentleness, Flexibility, and Patience) were associated with decreased odds of screening positive for mental health disorders (i.e., MDD, GAD, and SAD) suggesting a possible resilience relationship. High levels of Forgivingness, Flexibility, Gentleness, and Patience may improve cadet effectiveness when working with communities and increase peer, friend, and familial supports, which could facilitate resilience (Keiser 2020; Nisbet et al. 2023; Vig et al. 2020; Srivastava et al. 2008). In contrast, low scorers on Agreeableness have been characterized as being quick tempered, aggressive, and resentful, as well as associated with experiences of psychological distress (Ashton et al. 2014; Afshar et al. 2015), all of which may serve as risk factors for PTSD (e.g., APA 2022; Meffert 2008).

For men, increased Agreeableness and all related facets (i.e., Gentleness, Flexibility, Patience, and Diligence) were associated with decreased odds of screening positive for mental health disorders. High levels of Agreeableness may increase cooperation while working with others and social supports which could further facilitate mental health resilience. Men cadets with low scores on Agreeableness, Forgivingness, and Patience may benefit from early access to supports and resources. Overall, RCMP Cadets already appear to score higher on Agreeableness and all related facets than the general population (Andrews et al. 2023), suggesting a need to maintain and bolster such traits, rather than more rigorously selecting for such traits.

Conscientiousness

Extraversion and Openness to Experience were statistically significantly associated with decreased odds for positive mental health disorders screens, but Conscientiousness was not. Extraversion, Conscientiousness, and Openness to Experience are three conceptually parallel dimensions, each describing engagements within three independent areas of endeavor (social, task-related, and idea-related respectively; Ashton and Lee 2007). High levels of these three factors are associated with increased opportunities for gains resulting from investing energy and time in social, task, and idea-related endeavors. High levels of Extraversion may promote gains of a social nature (i.e., access to friends, allies, and partners). High levels of Conscientiousness may promote gains of a material or economic nature, as well as improved health and safety. High levels of Openness to Experience may promote social and material gains via new discoveries. Based on the current results, expending energy and time in social (Extraversion) and idea-related endeavors (Openness to Experience) may increase social supports and knowledge, which could facilitate resilience more effectively than expending energy and time to increase material or economic gain (Conscientiousness). Further research is needed to understand the interactions between these three parallel dimensions of personality and associations with mental health.

Openness to Experience

Openness to Experience corresponds to engagement in idea-related endeavors such as learning, imagining, and thinking (Ashton and Lee 2007). Evidence to date regarding associations between Openness to Experience and mental disorders has been inconsistent (Kotov et al. 2010), but there have been reported associations with MDD symptoms (Chiappelli et al. 2021; Wolfestein and Trull 1997) and SAD (Kaplan et al. 2015). The facets of Openness to Experience (e.g., Aesthetic Appreciation, Inquisitiveness, Creativity, and Unconventionality) were not statistically significantly associated with decreased odds for positive screenings for mental health

disorders among the total sample. However, for women only, increased Openness to Experience, Aesthetic Appreciation, and Inquisitiveness were associated with increased odds for PTSD, MDD, and GAD.

Openness to Experience encompasses facets related to fantasy, imagination, and willingness to explore new ideas, potentiating MDD and other mental disorders through greater rumination on negative experiences and attentiveness to negative feelings (Khoo and Simms 2018). Openness to Experience has also been associated with stressful life events (Hengartner et al. 2015; Hovens et al. 2016; Rahman et al. 2017) and reported to mediate the relationship between stressful life events and MDD symptoms (Chiappelli et al. 2021). The same mediation may occur for other mental disorders (e.g., PTSD and GAD). Stressful life events may force people to assess experiences as part of the process of seeking meaning in the face of adversity. Stressful experiences may lead individuals to focus on the discrepancy between their actual and desired state, which could potentiate MDD symptoms (Wolfestein and Trull 1997. Persons with higher Openness to Experience might be more likely than others to experience large discrepancies between their actual and ideal states (e.g., due to fantasizing) (Wolfestein and Trull 1997) and therefore may be at increased risk for mental health challenges.

In contrast, Openness to Experience has also been associated with posttraumatic growth (Calhoun et al. 2010; Staugaard et al. 2015; Zerach 2015). High levels of Openness may enable reflection on life goals and values following a stressful event, facilitating posttraumatic growth (Calhoun et al. 2010; Zoellner et al. 2008), and broadly increasing resilience to other mental disorders. Nevertheless, how specific traits related to Openness to Experience facilitate mental health risk or resilience remains unclear. Further study of the interplay between, stress, Openness to Experience, and mental health is needed. The current results should be interpreted cautiously considering cadets have previously reported lower scores for Openness to Experience and related facets than the general population (Andrews et al. 2023).

Strengths and Limitations

The current results add to existing knowledge about personality and associated mental health among RCMP cadets starting the CTP and by extension all PSP. There are limitations to the current study that provide directions for future research. The voluntary nature of cadet participation in the RCMP Study creates an unknowable influence from self-selection biases. Participant responses were based on anonymous self-reporting to a web-based survey. The reliability and validity of web-based self-reported mental disorder symptom clusters remains ambiguous for the current population (Bethlehem 2010). Meta-analytic comparisons of self-report and interview assessments suggest against substantial differences (Berger et al. 2012). As part of the RCMP selection and recruitment process, individuals could have been pre-screened out leaving the "most healthy" cadets selected for the CTP.

The current work is using cross-sectional data from the RCMP Study; accordingly, there are limits for conclusions regarding causal pathways underlying the relationship between personality and mental health disorders and limits to the generalizability of results. The current results do provide interim opportunities for supporting mental health, as well as critical foundations for the longitudinal work associated with the RCMP Study. Future research should examine association between baseline personality and mental health after the CTP and annual follow-ups. The RCMP Study will allow for such longitudinal analyses. The current research used a variable centered assessment of associations between personality factors and facets and mental disorder risk. A person-centered approach could provide insight into interactive relationships among personality factors, identify homogenous subgroups within the population, and describe how personality factors are distributed in these subgroups (Li et al. 2021). Further research is needed to examine the interplay between factors and facets of personality and mental health disorders.

Despite limitations on causality conclusions, in the context of previous research, the current results implicate several processes as crucial for understanding personality and mental health. Overall, men and women RCMP cadets have reported higher scores on Agreeableness (and all related facets) and Extraversion (and all related facets) and lower on Emotionality (and all related facets except Dependency) and Openness to Experience (and all related facets) than the general population (Andrews et al. 2023), indicating they begin their training with characteristics thought to facilitate mental health resilience.

Conclusion

The current study provides novel evidence of associations between cadets' HEXACO personality factors and mental health disorders. High Agreeableness, Extraversion, and to some extent Openness to Experience were each associated with decreased odds of screening positive for mental disorders, suggesting relationships with resilience. In contrast, high Emotionality was associated with increased odds of screening positive for mental disorders and may help inform resources and supports to reduce mental health risks among cadets and serving RCMP. Examining the facet-level traits and gender differences provided nuanced information about relationships between mental health and HEXACO factors. The current results provide insight into individual differences associated with PTSI, specifically associations between HEXACO

personality factors and facets and mental health disorders. Overall, RCMP cadets already appear to be starting the CTP with personality profiles indicative of mental health resilience, suggesting a need to maintain and bolster such traits, rather than more rigorously selecting for such traits. The current results can also be used to inform efforts to mitigate PTSI among RCMP cadets, serving RCMP and other PSP. Further longitudinal research results, which the ongoing RCMP Study will provide, is needed to understand the role of personality in the development of mental health disorders over time.

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Data Availability The datasets presented in this article are not readily available due to the sensitive nature of the content and to protect anonymity of participants. Requests to access the datasets should be directed to katie.andrews@uregina.ca.

Declarations

Ethics Approval The studies involving human participants were reviewed and approved by University of Regina Institutional Research Ethics Board. The participants provided their written informed consent to participate in this study.

Competing Interest The authors declare no competing interests.

Author's Notes The RCMP Study hypotheses were pre-registered. Hypotheses specific to individual difference variables are provided in supplemental tables (see http://hdl.handle.net/10294/14680) i.e. "Posttraumatic Stress Injury Symptom Measures"; "Primary Differences Associated with Posttraumatic Stress Injuries"; and "Secondary Individual Differences Associated with Posttraumatic Stress Injuries").

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