THE PSYCHOLOGICAL VEST: TRAUMA, RESILIENCY, AND POSTTRAUMATIC GROWTH AMONG POLICE OFFICERS

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Abstract

Police officers are often required to make split-second decisions in unpredictable and ambiguous critical situations, while held to extremely high moral and ethical standards and intense public scrutiny. Given their level of trauma exposure and risk for traumatic and morally injurious distress, it is vital to better understand psychosocial factors which serve to increase risk or resilience, to shape a metaphoric psychological vest. In addition, a psychometrically sound measure of moral injury is needed to accurately identify such risk and resiliency factors. The current dissertation project first investigated the psychometric properties of the Moral Injury Assessment for Public Safety Personnel (MIA-PSP). Next, thematically-connected psychological (i.e., facets of mattering, grit, socially prescribed perfectionism, self-compassion, posttraumatic cognitions) and social (i.e., workplace stress, job satisfaction, childhood adversity, social support, perceived public benevolence) factors were examined in their relatedness to posttraumatic stress disorder (PTSD), moral injury (MI), depression, anxiety, burnout, life satisfaction, and posttraumatic growth.

The sample of study were 367 police officers (Median = 20 years of service; 72.5% men) from 17 small to large municipal and provincial police services across Ontario. Officers completed an online battery of validated measures assessing both the aforementioned risk and resiliency factors and trauma-related outcomes.

First, regarding the MIA-PSP, confirmatory factor analysis modelling supported a correlated three-factor structure that was invariant across gender and years of service. Controlling for shared variance amongst the subscales, the emotional sequelae and betrayals subscales demonstrated unique predictive power with measures of trauma, trauma-related

outcomes, and well-being. Findings suggest the MIA-PSP is a promising scale to assess MI within police populations.

Second, the psychosocial factors of anti-mattering, self-compassion, and posttraumatic cognitions were identified as predictive of every distressing trauma-related outcome under investigation. Heightened anti-mattering and posttraumatic cognitions served as risk factors for increased PTSD, MI, depression, anxiety, burnout and poorer life satisfaction, with heightened self-compassion serving as a resilience factor in buffering against those outcomes and facilitating life satisfaction and posttraumatic growth. These risk and resilience factors are posited as tied to a core emotion of shame, which is discussed with reference to notable opportunities for clinical intervention.

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Chapter 1: General Introduction

"To serve and protect" is not just a slogan, it is the moral and ethical duty embodied by those who wear the police uniform. While police officers are issued bulletproof Kevlar vests to protect them from physical harm, the question remains, how are they protected from psychological harm? Unfortunately, there exists no complete psychological vest to protect them from the negative mental health effects resulting from exposure to potentially traumatic events. These events are often categorized as violent (e.g., shooting incidents) or very depressing (e.g., exposure to corpses) (Carlier et al., 1997). One of the unique and challenging components of this occupation is the often split-second decision-making required to act in unpredictable and ambiguous critical situations, while at the same time being held to extremely high moral and ethical standards and intense public scrutiny (Angehrn et al., 2020; Norberg, 2013; Papazoglou, 2013)

This dissertation project is focussed on identifying the psychosocial target components for crafting this psychological vest. Specifically, I examine thematically-connected psychological (i.e., personality, cognitive, and self) and social (i.e., workplace and interpersonal) factors that might serve to increase risk or foster resilience in the face of traumatic events in the line of duty. As I will further explore in this pointed literature review, there are a multitude of negative psychological outcomes that can occur in the aftermath of trauma, including posttraumatic stress disorder (PTSD), depression, anxiety, burnout, poor life satisfaction, and moral injury (MI; violation of one's internal moral code). However, positive changes are also

possible in the form of posttraumatic growth, which arises from a meaning making process in the aftermath of the traumatic event. Psychosocial factors of study, that have been considered as being associated with the aforementioned trauma outcomes but have yet to be thoroughly investigated in the context of policing, include: grit (endurance and perseverance), mattering (sense of belongingness) and anti-mattering, work mattering, public benevolence (police perceptions of the public's intentions), socially prescribed perfectionism (demanding expectations of others), and posttraumatic cognitions. Other factors are more broadly considered in the literature, such as adverse childhood experiences (ACEs), social support, job satisfaction, and self-compassion. These factors are somewhat better understood in the context of trauma exposure in policing, though there is little understanding of their relevance in the context of MI or posttraumatic growth.

The main goal of this dissertation project is to gain insight into the presence of these risk and protective factors in the context of policing and their potential role in exacerbating or mitigating the occurrence of trauma-related outcomes. This research is considered a crucial beginning step towards the metaphoric fashioning of a prototype psychological vest for police officers, while more broadly furthering our understanding of factors that contribute to posttraumatic distress within the unique domain of Canadian policing. Much of the research to be described was completed within the international policing context, and in particular, among our American counterparts. Given societal and political differences regarding the profession of policing, including differences in training, philosophy, and organizational structure, it remains unclear whether research findings are generalizable across borders. It is thus imperative for studies such as this one to shine a spotlight on those Canadians who serve in a public safety profession that so many describe in dedicated terms as a career path which has "chosen them."

The Canadian Policing Context

Policing in Canada is delivered at the municipal, provincial, and federal levels. Municipally, there are stand-alone services and self-administered Indigenous police forces. In Ontario, where the study was conducted, the Ontario Provincial Police (OPP) also offers municipal, rural, and Indigenous policing in those locations where self-administered services have not been established. In 2020, the OPP served 327 (74%) of Ontario's municipalities, and approximately 16.3% of Ontarians (Auditor General, 2021). In 2023, this increased to 329 municipalities served (OPP, 2024). The OPP is responsible for patrolling over one million square kilometres of land and waterways, and in 2023 received over 2.3 million calls for service (OPP, 2024).

More broadly, in the province of Ontario where the study was conducted, approximately 26,704 police officers were serving across municipal and provincial levels in 2023, with 6,135 serving specifically with the OPP (OPP, 2024; Statistics Canada, 2024a). Looking to the demographic makeup of Canadian policing, approximately 8% of all Canadian officers identified as belonging to a racialized group in 2023; in comparison, this number was 2% in the OPP (Statistics Canada, 2024a). The number of women officers continues to grow, with 23% of all Canadian police officers being women in 2023, up from 4% in 1986 (Statistics Canada, 2024a).

Given the increasing Canadian population, the rate of police strength (i.e., officers per 100,000) has been on a downward trend over the past decade. In Canada, the rate of 178 officers per 100,000 in 2023 was down 2% from 2022 and at its lowest since 1970 (Statistics Canada, 2024a). In Ontario specifically, police strength fell from about 185 to 171 officers per 100,000 from 2000 to 2023 (Statistics Canada, 2024a). However, the number of civilian operational staff

continues to trend upward (Statistics Canada, 2024a). Police operating expenditures rose 6% from 2022 to 2023, though accounting for inflation reflects a slight 0.5% decrease; this amounted to 335 dollars per Canadian (Statistics Canada, 2024a).

Staffing shortages are of great concern within the Canadian policing landscape due to challenges in both recruitment and retention. The Royal Canadian Mounted Police (RCMP), for example, has an attrition rate of approximately 850 officers annually, mainly due to retirement (National Police Federation, 2022). In contrast, they are not graduating enough new cadets to fill these vacancies, with an approximate deficit of 2,050 cadets between 2019 to 2023 (National Police Federation, 2022). The rate of police resignations in North America rose significantly peri- and post-pandemic and is expected to remain at high levels for the next several years (Mourtgos et al., 2022). The stressors associated with policing during the pandemic coincided with burgeoning public disapproval of police in the wake of the death of George Floyd in the United States. Protest movements (i.e., "defund the police") and negative sentiment in news and media accounts reflect a level of societal negativism towards the profession. Unsurprisingly, this increased criticism and associated low morale have been cited as reasons for police officer resignations in the U.S. (e.g., Lehman, 2021; Lytle et al., 2025; Westervelt, 2021) and is likely implicated in escalating recruitment challenges. There is a vicious cycle here, of fewer officers doing more work, leaving them at-risk for burnout and going "off-duty sick," medically discharging, or early retirement, ultimately leading to further staffing shortages. Now, more than ever, given this concerning public safety context, it is timely to identify psychosocial risk and resiliency factors to better understand what fosters a healthier policing population which in turn has a direct impact on cfommunity safety.

Notably, Canadian police officers appear to endorse greater availability of mental health resources (94%) in comparison to other countries such as the United States (80%), United Kingdom (82%), Australia (93%), and New Zealand (91%) (Ménard et al., 2016), though the available data is almost a decade old. Canadian officers also reported less frequent use of negative coping strategies (e.g., alcohol) (Ménard et al., 2016). Also, the makeup of Canadian policing involved the lowest rate of prior military service (just 13%) in comparison to these other countries (Ménard et al., 2016). This is reflective of the unique landscape of policing in Canada, the unique makeup of the Canadian police population, and the need for further study of trauma and resiliency specifically among Canadian officers.

Trauma, Traumatic Stress, & Moral Injury

Canadian police officers are exposed to potentially traumatic events at a much higher rate than the general population. Where most civilians will experience on average one or more potentially traumatic *events* in their lifetime (Kilpatrick et al., 2013), Canadian municipal and provincial officers are exposed to an average of 11.08 *categories* of exposure (e.g., sudden violent death, physical assault), with many experiencing a *specific category event* 11 or more times (Carleton et al., 2019). In line with this increased rate of trauma exposure in their field of work, Canadian police officers are at heightened risk for developing PTSD and other mental disorders such as depression or anxiety, as well as experiencing burnout. In fact, anywhere from 13 to 32% of police officers report PTSD symptoms in comparison with 1 to 11% of the general population (e.g., Afifi et al., 2009; Asmundson & Stapleton, 2008; Liberman et al., 2002; Robinson et al., 1997). Within the Canadian context, a large-scale study spotlighting Canadian public safety personnel (PSP) mental health revealed that 36.7% of municipal and provincial police officers screened positive for a traumatic stress, depressive, anxiety, or substance use

disorder (Carleton et al., 2018). Specifically, point prevalence rates for PTSD, major depressive disorder, and generalized anxiety disorder were 19.5%, 19.6%, and 14.6% respectively (Carleton et al., 2018). This contrasts with 12-month prevalence rates of 7.6% for major depressive disorder and 5.2% for generalized anxiety disorder in the Canadian civilian population (Stephenson, 2023). Additionally, more recent data on PTSD rates in the Canadian civilian population suggested a point prevalence rate of 8.5% (Statistics Canada, 2024b).

While not classified as a mental disorder per se, burnout is an important construct to consider within the scope of police mental health and well-being. Burnout is a reaction to workplace stress, particularly interpersonal and emotional stressors, which is exhibited through exhaustion and disengagement from work (Demerouti et al., 2010). Studies have identified that upwards of one-third of police officers exhibit burnout symptoms (Hawkins, 2001) which is considered to relate directly to poor life satisfaction (Malach-Pines, 2005). Among police officers, burnout and PTSD symptoms have been associated (Juczyński & Ogińska-Bulik, 2022), and it is posited that struggling with burnout leaves PSP with a reduced capacity to cope with traumatic experiences, thus at greater risk of developing PTSD (Katsavouni et al., 2016).

Police officers are also uniquely vulnerable to experiencing moral injury (MI), which can occur following situations in which one acts, fails to prevent, witnesses, or learns about an action that violates ones' internal moral code (e.g., witnessing or contributing to civilian deaths) or when one is betrayed in a way by another individual or institution as to feel morally violated (e.g., belief that insufficient training led to negative consequences) (Litz et al., 2009; Shay, 1991). Initially borne out of clinical work with military service members and veterans, the construct of MI is conceptualized as the negative emotional, cognitive, behavioural, social, and spiritual sequelae resulting from exposure to potentially morally injurious events (pMIEs)

(Jinkerson, 2016). To date, our best understanding of the internalized aspects of the MI construct reflects a constellation of guilt, shame, anger, loss of trust, self-criticalness and low self-worth, negative beliefs about others, and spiritual/existential crises (Jinkerson, 2016; Vargas et al., 2013).

MI is associated with other negative psychological and behavioural outcomes including PTSD, depression, anxiety, self-harm, suicidal ideation, substance use, and interpersonal problems (Frankfurt & Frazier, 2016; Jinkerson, 2016; Vargas et al., 2013; Williamson et al., 2018). Importantly, MI distinguishes itself from the fear-based model of PTSD; MI seeks to capture the negative psychological experience of violations to one's internal moral code, where the pMIE is not required to involve threat of death, injury, or sexual violence (APA, 2013; Litz et al., 2009; Shay, 1991). Observed differences in symptom profiles are borne out of this, with certain intrusive and arousal symptoms not often seen within the MI framework (Bryan et al., 2018).

Meaning Making & Posttraumatic Growth

While there are negative psychological outcomes which can stem from exposure to traumatic events—including PTSD, MI, burnout, anxiety, and depression—a burgeoning field of positive psychology research is focussed on the concept of "meaning making" and "posttraumatic growth" in the aftermath of trauma (Tedeschi & Calhoun, 1996). Meaning making refers to the way in which people understand and interpret current life situations and the world, based on past experience and acquired knowledge (Park & George, 2013). Posttraumatic growth results from a changing worldview and evidence suggests it may foster resilience in the face of future trauma (Lindstrom et al., 2013; Tedeschi & McNally, 2011). This growth in resiliency that occurs in

ones' life following trauma may include believing in new possibilities, heightened personal strength, appreciation for life, ability to relate to others, and spiritual changes (Tedeschi & Calhoun, 1996, 2004). The processing of trauma is deemed critical to posttraumatic growth; thus, factors which foster avoidance and inhibit disclosure and meaning making have been shown to be detrimental to its development (Tedeschi & Calhoun, 2004; Kashdan & Kane, 2011). To facilitate posttraumatic growth, individuals must cognitively engage with making sense of the event and its meaning in their lives (Henson et al., 2021; Tedeschi & Calhoun, 2004).

Posttraumatic growth has been considered only to a relatively limited extent within police populations, with the few available studies suggesting further research is greatly warranted. For example, duty-related trauma exposure predicted posttraumatic growth in New Zealand (Huddleston et al., 2006), American (Chopko, 2010; Chopko et al., 2019), and Canadian police officers (Horswill et al., 2021). Interestingly, personal trauma exposure prior to police service has been considered for some to possibly facilitate greater posttraumatic growth following duty-related exposure (Paton et al., 2009), in line with stress inoculation models.

Risk & Resiliency Factors

Given that only a minority of individuals will develop negative reactions in the aftermath of a potentially traumatic event, there has been a significant research focus on investigating factors which are implicated in the connection between these events and negative psychological outcomes. Under investigation are factors which heighten risk as well as those which serve to foster resilience and buffer against negative mental health outcomes. A wide range of pre- (e.g., childhood adversity, lifetime trauma exposure) and posttraumatic (e.g., social support, hopelessness) factors have been investigated over the past few decades, with some robust

predictors identified including childhood adversity and social support, among others (e.g., Brewin et al., 2000; Komarovskaya et al., 2014; Marmar et al., 2006; Ozer et al., 2003; Roth et al., 2022b). Among police officers, in particular, job satisfaction and self-compassion have also been considered (e.g., Bonumwezi et al., 2022; Bourke & Craun, 2014; Choi & Song, 2018; Fleischmann et al., 2021)

Again, while the broad field of work-related stress conditions reflects decades of research on risk and resiliency, there remain a host of factors which seem to be associated with trauma outcomes but have not yet been investigated thoroughly in the context of policing: grit, facets of mattering (i.e., general mattering, anti-mattering, and work mattering), public benevolence, socially prescribed perfectionism, and posttraumatic cognitions. Furthermore, to an even more limited extent, there has been little to no investigation of these factors in the context of MI or posttraumatic growth in general.

As a reader, you may be wondering why this collection of risk and resiliency factors was selected for investigation within the context of policing and trauma exposure. The specific psychosocial factors were chosen according to their presumed relevance, based on case accounts and feedback from participating police services, placing emphasis on a co-created research design. In addition, the following pages present both empirical and theoretical support for the utility in considering these factors among police officers. These factors are thematically connected in that they represent a collection of social (workplace and interpersonal) and psychological (personality and self) factors which shape the way an individual responds to themselves in the face of trauma exposure. These factors are all implicated in the degree to which one internalizes traumatic experiences, has the capacity to heal within the context of supportive relationships, and in their influence on how one will derive meaning from exposure to

trauma. Individually, the specific makeup of these factors within an officer will greatly impact their approach-oriented versus avoidant style in navigating distressing memories, thoughts, and emotions which may be present in the aftermath of trauma. What follows is a description of each risk and resiliency factor and our current understanding of how they relate to PTSD, MI, depression, anxiety, burnout, life satisfaction, and posttraumatic growth. This research is contextualized within police and PSP populations, or where research is limited in these populations, within extant and potentially relevant studies in military and civilian populations.

Workplace Social Factors

Considered here are social factors related to the policing workplace environment, including work stress (operational and organizational stress), the degree to which one is satisfied with their job as a police officer (job satisfaction), and uniquely studied here, their perceptions of those they serve as trustworthy and caring (public trustworthiness-benevolence).

Operational & Organizational Stress

Over and above the degree of exposure to potentially traumatic events, what is also critical to our understanding of police mental health is the level of stress they experience on a day-to-day basis. In general, routine work stress has been associated with PTSD (Marmar et al., 2006), and has been identified as mediating the relationship between critical incident exposure and PTSD and between current negative life events and PTSD among American police officers and other PSP (Maguen et al., 2009).

With a greater degree of specificity, work stressors are often categorized into operational and organizational stress (McCreary & Thompson, 2006). Operational stressors are those

associated with completing police-related duties (e.g., “risk of being injured on the job”), whereas organizational stressors are those related to the organization and culture within which one works (e.g., “inconsistent leadership style”) (McCreary & Thompson, 2006). Among American and New Zealand police officers and other PSP, operational and organizational stress have been associated with anxiety, depression, and PTSD (Brough, 2004; Violanti et al., 2018). Looking to police officers specifically, a systematic review connected organizational and operational stress with PTSD, anxiety, depression, and burnout (Sherwood et al., 2019). Using a Canadian measure, The Police Stress Questionnaire, both operational and organizational stress were predictive of PTSD, depression, anxiety, burnout, and suicidal ideation among European police officers (Anders et al., 2022). Organizational stressors, in particular, were associated with burnout in a systematic review among correctional officers (Finney et al., 2013). Notably, the dissatisfaction with organizational support was related to the avoidance component of PTSD among European police officers (Carlier, 1997). Currently, the field is lacking an understanding of organizational and operational stress with the trauma-related outcomes of study within Canadian policing. Organizational and operational stress have further not yet been linked with MI, satisfaction with life, or posttraumatic growth. Considering and accounting for level of organizational and operational stress as contributors to deteriorated mental health is important when looking to other potentially meaningful psychosocial risk and resiliency factors.

Job Satisfaction

The degree to which one is satisfied and content with their job is important to consider in the framework of workplace stress. It is not necessarily understood to be the opposite of workplace stress; an officer could theoretically be facing a high degree of workplace stress yet satisfied with the work they do, which might in turn provide meaning and facilitate coping. Job

satisfaction is viewed here as a potential protective factor in the experience of trauma and pMIEs. Within military samples, lower levels of job satisfaction have been associated with greater depression and PTSD (Smith et al., 2017b). Previous work among Canadian and Korean police officers has demonstrated that job satisfaction is associated with positive mental health outcomes including positive affect, life satisfaction, and self-esteem (Han & Yoon, 2024; Kohan & O'Connor, 2002). Among PSP more broadly, negative mental health outcomes such as PTSD and burnout have been associated with poorer job satisfaction, including among international policing samples (Bonumwezi et al., 2022; Bourke & Craun, 2014; Choi & Song, 2018; Nonis et al., 2024; Thielmann et al., 2022). Notably, job satisfaction mediated the relationship between positive work characteristics and depression, but not anxiety, among Jamaican police officers (Nelson & Smith, 2016). In addition, through resilience training which reduced occupational stress among Indian police officers, job satisfaction and psychological well-being were improved in tandem, highlighting the connectedness of these constructs (Chitra & Karunanidhi, 2021). Looking to the relevance of job satisfaction within the MI framework, moral distress has been associated with poorer job satisfaction among healthcare workers (de Veer et al., 2023; Denham et al., 2022). There is currently a limited understanding in general of the relation between job satisfaction with MI and posttraumatic growth. Further, there is a limited understanding of the relation between job satisfaction with PTSD, anxiety, depression, burnout, and life satisfaction among Canadian police officers.

Public Trustworthiness - Benevolence

As noted above, there has been burgeoning public criticism toward police including protest movements (i.e., "defund the police") and negative sentiments reported in newspaper and media accounts in recent years. It is both timely and important to consider the relationship of

police officers with the community they serve, and in particular, the reciprocal perceptions within that relationship. While the public's perception of the trustworthiness of police has been studied extensively, what is often overlooked is the degree to which police officers in turn trust those whom they serve. Specifically, whether they perceive the public to be well intentioned and concerned with the welfare of police officers (Mourtgos et al., 2020). In fact, when police officers see the public as more benevolent, they engage in more proactive policing and are more willing to put themselves in harm's way (Mourtgos et al., 2020). Given a greater willingness to expose themselves to harm, the risk for police officers to suffer from PTSD may increase, yet perceiving support from the public might help to foster meaning making. To date, however, given the lack of research, it remains unclear how this perception of public trust construct might potentially mitigate adverse mental health outcomes among police officers or influence posttraumatic growth.

Interpersonal Social Factors

The following risk and protective factors in the social domain relate to the interpersonal context. From a historical and pre-service lens, this category includes exposure to childhood adversity (adverse childhood experiences), and in the context of the current research, the degree to which they feel supported by those around them (social support).

Adverse Childhood Experiences

Adverse childhood experiences (ACEs) are a strong and robust risk factor in the consideration of negative reactions to trauma. Widely studied in the context of the military and exposure to combat-related trauma, ACEs have been implicated in increasing the risk of negative mental health outcomes in a dose-response fashion including PTSD, depression, anxiety,

substance use, self-harm, and overall poor health and fatigue when controlling for combat exposure (Aronson et al., 2020; Iversen et al., 2007, 2008; LeardMann et al., 2010; Sareen et al., 2013). ACEs were also found to negatively impact satisfaction with life among women military veterans (McCauley et al., 2015). Prospectively, ACEs were found to be a stronger predictor of PTSD and depression outcomes than combat exposure (Cabrera et al., 2007). Specific types of ACEs, namely emotional abuse, have been associated with the development of MI among Canadian military members (Battaglia et al., 2019).

Extending this line of work to American and Canadian police officers, ACEs have been associated with greater risk for PTSD, anxiety, depression, and sleep problems cross-sectionally; longitudinally, they were associated with the development of PTSD symptoms, depression, and suicidality (Horswill et al., 2021; Komarovskaya et al., 2014; Roth et al., 2022b; Violanti et al., 2021; Wang et al., 2010). ACEs have also been linked to MI among American and Canadian PSP (Roth et al., 2022b). Less well understood is the relation between ACEs and life satisfaction and burnout among PSP, with ACEs identified as a risk factor for job-related burnout among physicians (Yellowlees et al., 2021).

A proposed mechanism for the relation between ACEs and adverse mental health outcomes is impaired recovery from subsequent adult trauma exposure (Iversen et al., 2007; Sareen et al., 2013), as well as reactivating negative core beliefs about the self which were internalized during experiences of childhood trauma (Battaglia et al., 2019). On the other hand, others posit some degree of childhood adversity serves a protective function against future adversity (Seery, 2011).

While ACEs are risk factors for mental health functioning, there is evidence to suggest that these experiences may facilitate posttraumatic growth (Devine et al., 2010; Walker-Williams et al., 2013). In fact, some evidence suggests ACEs positively predict posttraumatic growth among Canadian police officers (Horswill et al., 2021). There is room for continued exploration of how a robust risk factor such as ACEs is implicated in the development of PTSD, MI, and posttraumatic growth among Canadian police officers. There is a unique opportunity here to observe how ACEs relate to these outcomes when other psychosocial risk and resiliency factors are integrated. Further, there is a lack of knowledge in general about the role of ACEs in facilitating or hindering satisfaction with life and burnout among police officers.

Social Support

Social support is often considered one of the strongest protective factors in response to trauma. In general, meta-analyses suggest that following experiences of trauma, there is a large negative relation between social support and PTSD, with a medium negative relation between perceived social support and PTSD (Brewin et al., 2000; Ozer et al., 2003). Among PSP, a meta-analysis identified that social support was related to more positive and resilient outcomes following exposure to trauma, with a medium effect (Prati & Peitrantoni, 2010). For example, greater social support led to being more satisfied with one's life among American police officers (McCanlies et al., 2017). Social support has been implicated in promoting resilience following duty-related trauma exposure among Canadian and New Zealand police officers (Martin et al., 2009; Stephens et al., 1997), with low social support associated with adverse psychological outcomes such as depression, anxiety, PTSD, and burnout (see Sherwood et al., 2019 for review). For example, in a prospective study of American police officers, a higher level of perceived social support at training predicted reduced PTSD symptoms after two years (Yuan et

al., 2011). Longitudinally, higher levels of perceived social support during 9/11 were also associated with lower levels of depressive and anxiety symptoms in World Trade Centre PSP who were followed for up to 20 years (Pijnenburg et al., 2024). Social support was further implicated in partially moderating the relationship between years of service and depressive symptoms among U.K. police officers (Foley et al., 2024) and mediating the relationship between perceived stress and burnout in Chinese police officers during the COVID-19 pandemic (Chen et al., 2025). In their review, Sherwood and colleagues (2019) identified social support from colleagues as particularly important.

Social support also serves to buffer against the negative effects (e.g., suicide) of pMIEs among combat veterans (Levi-Belz et al., 2022) and fosters moral resilience amongst healthcare workers (Spilg et al., 2022). Among American firefighters, lessened social support was related to the experience of MI (DeMoulin et al., 2023). Theoretically, social support is posited to serve an important role in the moral resilience of high-risk occupation workers such as police officers (Osifeso et al., 2023). Naturally, experiencing a MI betrayal can involve losing key social supports in one's policing colleagues (McCormack & Riley, 2016).

The social buffering hypothesis suggests that social support serves as a resiliency factor whereby an individual is assisted in reappraising the traumatic event (Cohen & Wills, 1985). As a mechanism of posttraumatic growth through re-appraisal, the individual is offered an opportunity to explore and shape meaning with others (Calhoun & Tedeschi, 2006). Indeed, a meta-analysis suggests social support demonstrates a moderate effect size in its role in promoting posttraumatic growth (Prati & Pietrantoni, 2009). Among Australian and American police officers, social support is associated with posttraumatic growth (Harnett et al., 2023; Leppma et al., 2016). Notably, the role of social support in the context of MI remains relatively unclear

among police populations. The role of social support following trauma exposure is also less well understood among Canadian police officers.

Personality & Self Factors

Described below are so-called 'internal' psychological risk and resiliency factors related to an officer's personality and sense of self. These characteristic styles and personal attributes reflect how an individual considers and respond within themselves to their distress. This includes approaching one's suffering with kindness (self-compassion), perseverance in the face of adversity (grit), the degree to which they perceive themselves as recognized, appreciated, and valued (facets of mattering), or weighed down by the internalized expectations of others (socially prescribed perfectionism), and their beliefs amidst the distress about themselves and the world (posttraumatic cognitions).

Self-Compassion

Self-compassion refers to a willingness to approach one's suffering and utilize kindness towards the self as a means of reducing that suffering (Neff, 2003). Self-compassion meditations and exercises have been found useful among military veterans in supporting their well-being and reducing negative mental health outcomes such as PTSD (e.g., Lang et al., 2019; Meyer et al., 2018). Among American PSP, self-compassion was noted as a resiliency factor in that it predicted less depersonalization, general psychological distress, PTSD, emotional exhaustion, as well as greater resilience and life satisfaction (McDonald et al., 2021). It has been negatively associated with burnout, compassion fatigue, and perceived stress in small samples of Spanish and U.S. police officers (Kaplan et al., 2020; Márquez et al., 2021). Among Australian officers, self-compassion was negatively associated with PTSD, depression, and anxiety, and positively

associated with well-being (Harnett et al., 2023). A study utilizing Canadian police officers indicated that while self-compassion was negatively associated with anxiety, stress, and depression, it did not moderate the relationship between operational and organizational stressors with these negative outcomes (Fleischmann et al., 2021).

Within the scope of MI, self-compassion lessened associations between pMIEs and depression and moderated the relationship between MI with PTSD and suicidality among members of the military (Forkus et al., 2019; Nazarov et al., 2018). Qualitatively, self-compassion appears to mitigate the effects of pMIE exposure among Canadian PSP (Smith-MacDonald et al., 2021). In line with this, others argue for the utility of self-compassion approaches in the treatment of MI among police officers (Papazoglou et al., 2020). There is also evidence to support the relationship between self-compassion and posttraumatic growth (e.g., Wong & Yeung, 2017). Among Australian police officers, self-compassion was positively associated with posttraumatic growth (Harnett et al., 2023). It remains somewhat unclear, however, how self-compassion specifically relates to MI and posttraumatic growth among police officers. There is also quite limited evidence within the Canadian policing context for the protective effects of self-compassion and trauma-related outcomes.

Grit

The term and construct of 'grit' has been defined as endurance and perseverance in the pursuit of long-term goals—a willingness to continue forward despite insurmountable challenges, adversity, and failure (Duckworth et al., 2007). This definition includes the two components of grit: *perseverance of effort* in the face of adversity and *consistency of interest* in the motivation towards goals (Duckworth et al., 2007). In a meta-analysis, the construct of grit

was related to conscientiousness, self-control, self-efficacy, mental toughness, and positive affect (Credé et al., 2017). While associated, grit is differentiated from conscientiousness in its emphasis on stamina, and from need for achievement in its focus on perseverance regardless of incentives (Duckworth et al., 2007; McClelland, 1985).

Indeed, in its original focus on predicting success and achievement, it has been identified that over and above conscientiousness and self-control, grit predicted successful educational attainment and achievement, as well as retention within the workplace and challenging environments such as the U.S. Military Academy at West Point (Duckworth et al., 2007; Duckworth & Quinn, 2009). While somewhat critical and revealing of some cautionary notes, a meta-analysis on largely student populations identified the perseverance factor as providing particular explanatory power in this regard (Credé et al., 2017).

There is extensive literature regarding the effect of grit on achievement and retention within various domains, falling outside the scope of this dissertation project; here, we are interested in the construct of grit as being increasingly applied within the framework of resilience. For example, grit has been associated with lower levels of burnout and greater psychological well-being among healthcare workers (Salles et al., 2014, 2017). Grit served as a buffer between hopelessness, negative life events, PTSD symptoms, and suicidal ideation among university students and military members (Blalock et al., 2015; Marie et al., 2019; Pennings et al., 2015). Grit was also related to lower rates of co-occurring psychiatric disorders among individuals with substance use disorders (Griffin et al., 2016). Extending this work to PSP, lower levels of grit predicted greater PTSD symptoms among American emergency medical services (EMS) personnel (Musso et al., 2019). To my knowledge, the role of grit has not yet been considered in stress research in police populations to date.

Grit is reflective of engagement in life and the pursuit of meaning (Von Culin et al., 2014), and it has been identified that increasing meaning in life is a mechanism by which grit bolsters resiliency and diminishes suicidality (Kleiman et al., 2013). In line with these findings, grit was positively correlated with life satisfaction (Singh & Jha, 2008). In relation to coping, grit was positively correlated with active coping and acceptance while negatively correlated with denial, disengagement, substance use, and self-blame among EMS personnel (Musso et al., 2019). Among Korean firefighters, grit had a mediating effect on the relationship between occupational stress and burnout (Jung et al., 2020). Longitudinally, grit has also been identified as being related to posttraumatic growth among students following the COVID-19 pandemic (Casali et al., 2023).

Grit is a personality trait which individuals can bring to bear in their approach to difficult and challenging situations. It may confer resiliency in the face of trauma and pMIEs among police officers. Interestingly, grit is noted to positively predict moral competence following simulated combat exposure among U.S. military cadets, where moral competence is defined as the ability to navigate moral conflict effectively (Georgoulas-Sherry & Hernandez, 2021). It has been posited that its clinical utility is in fostering a persistence towards the goal of recovery despite challenges and possible setbacks (Griffin et al., 2016). There does remain a question of how long persevering is helpful, as it is suggested that individuals may incur costs to continued effort (Lucas et al., 2015). With the associations with meaning and morality, as well as buffering against psychological dysfunction, grit has great potential as a protective factor against MI and PTSD and may facilitate meaning making and posttraumatic growth among police officers.

Mattering & Anti-Mattering

A unique element of this research is that it examines individual differences in mattering among police officers. Mattering is a multi-faceted construct related to perceptions of the degree to which one feels recognized, unique, significant, important, appreciated, and valued in their life and the lives of others (Flett, 2018; Rosenberg, 1985; Rosenberg & McCullough, 1981). Mattering is similar to, but distinct from, constructs such as belongingness and self-esteem (Flett, 2018). Through fostering inner resources, mattering is believed to help an individual respond positively and overcome challenges in life (Flett, 2022). Providing unique variance relative to other robust predictors, a multitude of studies utilizing populations across the lifespan suggest mattering is negatively associated with self-criticism and predictive of lower levels of depression, anxiety, loneliness, suicidal ideation, and a greater degree of happiness, well-being, and life satisfaction (see Flett, 2022 for review: e.g., Deforge et al., 2008; Demir & Davidson, 2013; Flett et al., 2016; Flett et al., 2021; Lenz et al., 2018; McComb et al., 2020; Milner et al. 2016). Lessened mattering has been related to greater burnout among nurses (Haizlip et al., 2020). Among U.S. military members, mattering was associated with increased sense of self-efficacy, greater physical health, and psychosocial resources (Gruber et al., 2009). In a qualitative study of Canadian military veterans and the utility of service dogs, feelings of mattering were implicated in this experience which helped to reduce self-harm and suicidality (Pavelich et al., 2024). At the meta-analytic level, findings suggest a medium effect size between mattering and overall well-being (Paradisi et al., 2023). Fostering a sense of mattering has also been posited as important in the healing of MI among healthcare workers post-pandemic (La Fleur, 2022), and in reducing the occurrence of burnout, moral distress, and secondary traumatic stress among healthcare workers (Epstein et al., 2020).

The current research examines the various facets of the mattering construct in both broad and specific ways by including measures that tap not only general feelings of mattering and not mattering to others, but also specific feelings of mattering at work. As mentioned above, general mattering reflects a feeling of being recognized and valued in the lives of others, measured by items on the General Mattering Scale such as "how important do you feel you are to other people?" (Flett, 2018; Marcus & Rosenberg, 1987). Anti-mattering has been conceptualized not simply as the opposite of mattering in a dimensional framework, but as qualitatively distinct, identified as the degree to which one feels unimportant, marginalized, devalued, and not seen or heard...*invisible* (Flett, Nepon, et al., 2022). In contrast to the General Mattering Scale, the Anti-Mattering Scale holds items such as "how often have you been treated in a way that makes you feel like you are insignificant?" (Flett et al., 2022). Where mattering is generally considered protective, anti-mattering is considered a risk or vulnerability factor. Anti-mattering was related to negative self-view and low self-esteem, lessened life satisfaction, as well as increased levels of emotion dysregulation, depression, anxiety, and loneliness among university students (Flett, Nepon, et al., 2022; Giangrasso et al., 2022). It has further been associated with suicidal ideation, shame, hopelessness, all-or-nothing thinking, and relational stress within online peer support communities (Deas et al., 2023). Longitudinally, anti-mattering positively predicted later depressive symptoms amongst young adults (Krygsman et al., 2022).

In recent years, greater emphasis is being placed on the examination of general mattering and anti-mattering within the context of trauma exposure. A study on mattering, trauma, and posttraumatic growth in a sample of Palestinian adults revealed that one's level of trauma exposure was positively associated with feelings of anti-mattering (Bdier et al., 2025). Psychological well-being was strongly positively correlated with general mattering, with a small

negative correlation with anti-mattering (Bdier et al., 2025). Further, there was a strong positive correlation between general mattering and posttraumatic growth, with a moderate negative correlation between anti-mattering and posttraumatic growth (Bdier et al., 2025). Another study investigating the impact of victimization and mattering identified that feelings of mattering were associated with fewer trauma symptoms in a sample of community adults (Hamby et al., 2025). Conversely, lessened mattering was related to heightened PTSD symptoms in those displaced by Hurricane Katrina (Morris & Deterding, 2016). Notably, heightened mattering has been associated with more resilient profiles of a diverse sample of American police officers and forensic examiners exposed to child sexual abuse materials, whereby those with high rates of trauma exposure but greater feelings of mattering experienced lessened depression, anxiety, and posttraumatic stress (Mitchell et al., 2024).

To date, there has only been one study investigating mattering and anti-mattering within police populations, conducted in the American context. Given the described findings among civilian, military, and PSP samples alike, it is imperative to better understand how mattering and anti-mattering are implicated in trauma resiliency, MI, and posttraumatic growth among police officers. Feelings of not mattering place officers at great risk for internalizing traumatic experiences ultimately fueling psychological distress.

Work Mattering

Mattering as described above examines being valued by others in general terms. It is also possible and meaningful to examine mattering in specific contexts. Mattering as extended to the context of work specifically reflects an internalized sense of mattering to one's colleagues and whether one's work is valued by society (Jung & Heppner, 2017). With the current "defund the

police" discussions, some police may feel they matter to their fellow police officers, but not to society as a whole. This is crucial in how one perceives and creates a narrative surrounding the meaning of traumatic experience, including how worthwhile and important their work is that ultimately led to a traumatic event. There may be a special protection for police officers who can shake off the societal and political negativity and still see that their work matters greatly to most people. Within samples of working community adults, work mattering was related to greater work and life satisfaction, and positive affect, as well as lessened negative affect and withdrawal intentions (Jung & Heppner, 2017). Among nurses during the COVID-19 pandemic, greater work mattering related to increased work engagement and lessened burnout (Mohamed et al., 2022). Among PSP, greater work mattering was predictive of lessened distress, anxiety, and depression among Pakistani firefighters and EMS personnel (Shafiq et al., 2024). It is important to better understand how work mattering relates to mental health outcomes and resilience among police officers.

Overall, research has established that feelings of not mattering are linked with burnout in healthcare workers (e.g., Haizlip et al., 2020; Mohamed et al., 2022), and there are some initial studies that suggest that an unmet need to matter—reflected in lower levels of feelings of mattering—are associated with trauma and trauma-related distress (e.g., Bdier et al., 2025; Mitchell et al., 2024). Similar findings should be apparent among police officers given that those with personal and work-related feelings of not mattering will be faced with a discrepancy between their current circumstances and being invested in an important role focused on making a difference that is valued by others and by society.

Socially Prescribed Perfectionism

Perfectionism is a multi-faceted construct, and generally reflects an endless striving towards exceedingly demanding expectations; the dimension conceived to be the most deleterious in terms of mental health functioning is socially prescribed perfectionism (Flett, Hewitt, et al., 2022). The socially prescribed component of perfectionism relates to the perceptions one holds regarding others' expectations of achieving perfection, reflecting the perceived pressures and demands placed on oneself from persons, institutions, and society (Flett, Hewitt, et al., 2022; Hewitt & Flett, 1991a, 1991b). It has been hypothesized that this form of perfectionism may be at the forefront of certain occupational roles on which high expectations are placed, like policing (Flett, Hewitt, et al., 2022) due, in part, to the pressures associated with the consequences of possibly making a serious mistake in a high stakes situation. Negative sequalae of socially prescribed perfectionism include defeat and hopelessness in the face of reminders of failing to live up to unrealistic expectations and prescribed standards (Cramer et al., 2019; Flett, Hewitt, et al., 2022; Flett et al., 2014). Further, socially prescribed perfectionism has been found to reduce distress tolerance, described as a "stress-threshold lowering effect" (O'Connor et al., 2010).

In general, trait perfectionism and its various components are observed to be transdiagnostic risk factors across anxiety, mood, eating, and personality disorders (Antony et al., 1998; Corry et al., 2017). Perfectionism is viewed to act as a vulnerability factor for psychopathology through propagating the aversiveness of stressful experiences (Hewitt & Flett, 2002). Regarding sense of self, socially prescribed perfectionism is linked to unmet needs of autonomy, competence, and connection with other people (Jowett et al., 2016). In fact, lack of perceived control was identified as a moderator in the relationship between socially prescribed

perfectionism and trauma symptoms in community adults (Molnar et al., 2021). Other dimensions of perfectionism have also been correlated with PTSD in clinical samples (Egan et al., 2014), with perfectionism posited to hold some role in the experience of MI (Pfeffer et al., 2023; Worthington & Langberg, 2012), where it has been identified as strengthening the negative impact of moral stressors among veterinarians (Crane et al., 2015). Some evidence suggests that 'striving for standards' and 'order,' correlates of perfectionism, promote posttraumatic growth (Shuwiekh et al., 2018). Further, socially prescribed perfectionism has been linked to burnout among parents (Sorkkila & Aunola, 2020), and poorer life satisfaction among university students (Stoeber & Stoeber, 2009). Others have identified the association between socially prescribed perfectionism and depression and anxiety, but not satisfaction with life among students (Smith et al., 2017a).

Among Canadian police officers, aspects of perfectionism such as contingent self-worth and extreme goal difficulty were positively associated with emotional exhaustion, which in turn was negatively related to job performance (Hrabluik et al., 2012). To my knowledge, there exist no findings on the relation between socially prescribed perfectionism, in particular, and the trauma-related outcomes of study in this dissertation project. Given the findings within other populations, it is important to better understand the potential role of socially prescribed perfectionism as a risk factor within the institution of policing, one in which individuals are held to exceptionally high standards by their peers and society at large. This level of expectation may be implicated in the way police officers respond to pMIEs and are able to achieve some form of posttraumatic growth.

Posttraumatic Cognitions

Maladaptive cognitions and appraisals of oneself, the world, and self-blame have been implicated in the development and maintenance of PTSD, and as a mechanism of change in its treatment (e.g., Ehlers & Clark, 2000; Schumm et al., 2014; Wells et al., 2019). Rigidity in thinking, and one's views about themselves and the world, is believed to increase vulnerability in that it leaves an individual unable to more easily incorporate the traumatic event into their pre-existing schemas (Foa & Rothbaum, 1998). It is posited that negative posttraumatic cognitions foster avoidance, which in itself perpetuates PTSD symptoms (Ehlers & Clark, 2000).

While there has been limited scientific examination of posttraumatic cognitions among police officers, research findings among military veterans have shown positive associations between these negative cognitions with PTSD and depressive symptoms, and negative associations with resilience (e.g., Sexton et al., 2018). Among other PSP, like EMS personnel, we see positive associations between posttraumatic cognitions and PTSD within a European sample (Michael et al., 2016). Self-blame cognitions, in particular, were positively associated prospectively with PTSD symptoms over and above the level of trauma exposure within a sample of Australian firefighter trainees (Bryant & Guthrie, 2005). Looking to other indicators of PSP well-being, greater posttraumatic cognitions were linked to heightened current symptoms of PTSD, depression, and anxiety within a sample of Canadian firefighters and EMS personnel (Setlack et al., 2021). Further, posttraumatic cognitions have been shown to partially mediate the relationship between trauma exposure and PTSD symptoms within a heterogenous group of Canadian PSP (Regambal et al., 2015). Posttraumatic cognitions were also associated with perceived institutional betrayal among American PSP, which taken together suggests the potential for these kinds of cognitions to serve as a risk factor for MI (Berner et al., 2024).

Cognitive processing is believed necessary to facilitate posttraumatic growth, where both intrusive and deliberate rumination have been associated with increased posttraumatic growth (see Henson et al., 2021 for review). Core beliefs about the self, others, and the world must be challenged for growth to occur (Henson et al., 2021). While cognitive engagement is necessary, it remains unclear how the form of one's ruminative cognitions impact the development of posttraumatic growth. Namely, how one's *negative* perceptions of themselves, others, and the world may hinder or facilitate this growth process. It remains essential to assess the degree to which negative posttraumatic cognitions are implicated in adverse mental health outcomes, including PTSD, MI, depression, anxiety, burnout, and poor life satisfaction among police officers. Further, we need to examine the degree to which these processes underpin posttraumatic growth.

Dissertation Project Aims and Goals

Given that only a minority of individuals will develop negative reactions in the aftermath of a traumatic event, continued research is vital in investigating factors which are implicated in the connection between potentially traumatic events and negative psychological outcomes. As described above, there remain a host of factors which seem to be associated with trauma outcomes but have not yet been examined in the context of policing. In summary, there is a paucity of knowledge in general surrounding the connection between ACEs with life satisfaction and burnout, social support with MI, and job satisfaction with MI and posttraumatic growth. Within Canadian police populations, a further understanding of the connection between job satisfaction and social support with the remaining mental health outcomes is also needed. Further research in police populations is needed surrounding the relationships between self-compassion with MI and posttraumatic growth, with a limited understanding of the role of self-compassion in

the aftermath of trauma exposure among Canadian police officers. The psychosocial variables of mattering and anti-mattering have only been considered in one international study thus far, in a mixed group of police officers and forensic examiners. Grit, work mattering, and socially prescribed perfectionism have yet to be studied in police populations whatsoever, with public trustworthiness-benevolence and posttraumatic cognitions unstudied among police officers for the trauma-related mental health outcomes investigated in the current study. Thus, the current dissertation project seeks to fill a large gap in our understanding of risk and resilience following trauma exposure for the development of PTSD, MI, depression, anxiety, burnout, life satisfaction, and posttraumatic growth among police officers in general, and Canadian police officers, more specifically. This is further explored in the third chapter of this dissertation.

As noted above, the construct of MI has only recently begun to be thoroughly considered within the context of PSP including policing. In recent years, there has been greater emphasis on scale development to accurately assess MI among PSP. A recent measure, the Moral Injury Assessment for Public Safety Personnel (MIA-PSP) developed by Roth and colleagues (2023) was utilized in this study to assess MI as it is a population-specific measure and bridges the divide between the phenomenological and syndromal perspectives on MI. In order to accurately investigate risk and resiliency factors in the context of MI, there is need for further investigation of the psychometric properties of the MIA-PSP to assess its validity in measuring the outcome of MI. While good internal consistency reliability and both convergent and concurrent validity have been demonstrated among a heterogenous sample of Canadian and American PSP, this scale has yet to be validated using a confirmatory approach, nor has it been validated within a homogenous sample of police officers (Roth et al., 2023). In the second chapter, we examine the structural and concurrent validity of the MIA-PSP.

From the outset, this project was designed in partnership with the police services themselves as key stakeholders. Their feedback on the study goals and design was sought to ensure the findings would target the mental health needs identified within the departments surveyed. The goals of the dissertation project are to: (1) highlight the relation between these important psychosocial variables and negative psychological sequalae of trauma exposure, (2) identify targets for clinical interventions to help foster resilience among police officers and to help them overcome the traumas they face in the line of duty, (3) provide implications for the kinds of organizational change that might assist officers to feel more supported in their workplace mental health and in the way they support each other, and (4) help inform new possibilities and inform the potential for tailoring existing programming delivered by police services to their officers to foster resilience and growth and prevent the occurrence of mental illness.

Chapter 2: The Moral Injury Assessment for Public Safety Personnel: A psychometric investigation among Canadian police officers

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Abstract

Given the requirement for split-second decision making in unpredictable and morally ambiguous situations while in the line of duty, there is growing recognition that police officers are uniquely at-risk for experiencing moral injury (MI). There is a need for valid and reliable assessment tools of MI within police populations to extend research initially conducted in or within the military context. The Moral Injury Assessment for Public Safety Personnel (MIA-PSP) is a population-specific measure developed to assess MI across police officers, firefighters, paramedics, correctional officers, and 911 dispatchers. Initial exploratory validation work by Roth and colleagues (2022) identified a three-factor structure capturing *Emotional Sequelae*, *Perpetrations,* and *Betrayals*. The structure of the MIA-PSP has yet to be validated using confirmatory modelling. The present study sought to investigate the psychometric properties of the MIA-PSP in a sample of police officers (N = 367; Median = 20 years of service; 72.5% men). We examined measurement invariance across gender and years of service, as well as the concurrent validity of the proposed factors with measures of traumatic stress, trauma-related outcomes, and well-being. Confirmatory factor analysis modelling supported a correlated three-factor structure that was invariant across gender and years of service. Controlling for shared variance amongst the subscales, the Emotional Sequelae and Betrayals subscales demonstrated unique predictive power with measures of trauma, trauma-related outcomes, and well-being. Findings suggest the MIA-PSP is a promising scale to assess MI within police populations.

Keywords: moral injury, police officers, trauma, moral injury assessment for public safety personnel, confirmatory factor analysis

Introduction

Police officers are uniquely at risk for experiencing moral injury (MI) in the line of duty where they are often required to make split-second decisions in unpredictable and ambiguous critical situations, while at the same time being held to extremely high moral and ethical standards and intense public scrutiny (see Angehrn et al., 2020; Norberg, 2013; Papazoglou, 2013). Initially borne out of clinical work with military service members and veterans, the construct of MI is conceptualized as the negative emotional, cognitive, behavioural, social, and spiritual sequelae resulting from exposure to morally injurious events (MIEs) of transgressions and betrayals (Jinkerson, 2016; Litz et al., 2009; Shay, 1991). Potentially MIEs (pMIES) are situations in which one acts, fails to prevent, witnesses, or learns about an action that violates ones' internal moral code (e.g., witnessing or contributing to civilian deaths) or when one is betrayed in a way by another individual or institution as to feel morally violated (e.g., belief that insufficient training led to negative consequences) (Litz et al., 2009; Shay, 1991).

To date, our best understanding of the internalized aspects of the MI construct reflects a constellation of guilt, shame, anger, loss of trust, self-criticalness and low self-worth, negative beliefs about others, and spiritual/existential crises (Jinkerson, 2016; Vargas et al., 2013). MI is associated with other negative psychosocial outcomes including posttraumatic stress disorder (PTSD), depression, anxiety, self-harm, suicidal ideation, substance use, and interpersonal problems (Frankfurt & Frazier, 2016; Jinkerson, 2016; Vargas et al., 2013; Williamson et al., 2018). Importantly, MI is distinct from the fear-based model of PTSD in that it captures the negative psychological experience of violations to one's internal moral code, where the MIE is not required to involve threat of death, injury, or sexual violence (APA, 2013; Litz et al., 2009; Shay, 1991). In addition to capturing different experiences, there are observed differences in

PTSD and MI symptom profiles, with certain intrusive and arousal symptoms often not present within the MI framework (Bryan et al., 2018).

Since the first scale was developed by Nash and colleagues (2013) to assess MI within military populations—the Moral Injury Events Scale—there have been criticisms of the way in which MI is assessed. These criticisms span both scale content and the approaches used to assess the psychometric properties of said scales. This debate in the literature is particularly relevant to the present study and its psychometric investigation of the Moral Injury Assessment for Public Safety Personnel (MIA-PSP; Roth et al., 2022). With differing perspectives on accurate MI assessment, multiple scales have been developed and published to assess MI within PSP populations since the onset of the present study: The Expressions of Moral Injury Scale-First Responder Version (EMIS-FR; Tappenden et al., 2023), The Occupational Moral Injury Scale (OMIS; Thomas et al., 2023), and The Moral Injury and Distress Scale (MIDS; Norman et al., 2024).

The debate regarding the scale content domain is two-fold, including the use of phenomenological vs. syndromal and population-specific vs. generalizable items. Arguments against a phenomenological approach posit that it leads to conflating *exposure* to pMIEs with the actual *experience* of MI (e.g., Litz & Kerig, 2019; Yeterian et al., 2019). Thus, there has been a push for a syndromal approach, focussing more specifically on symptoms including the emotional, cognitive, behavioural, and spiritual outcomes of MI, which are distinguished from exposure to a pMIE (e.g., Jinkerson, 2016; Norman et al., 2024). However, others suggest that we do not yet have a solid enough understanding or consensus on the symptom makeup of MI to tailor assessments toward a heavily syndromal approach (Roth et al., 2022). As a result, some scales have items connect specific symptoms to a pMIE; items may link symptoms to more

general pMIE exposure (EMIS-FR, OMIS; Tappenden et al., 2023; Thomas et al., 2023) or to highly specific pMIEs (MIA-PSP; Roth et al., 2022). Authors have addressed the criticism related to population specificity by constructing scales with items tailored to particular populations such as the military, first responders and other PSP, and healthcare workers (e.g., MIA-PSP and EMIS-FR; Roth et al., 2022; Tappenden et al., 2023). Still others believe that scale item content should be generalizable enough to be utilized across various occupations at-risk for MI, such as found in the MIDS and OMIS instruments (e.g., Norman et al., 2024; Thomas et al., 2023).

The debate stems beyond item content into the way in which these scales were developmentally analyzed in their psychometric construction. Norman and colleagues (2024) criticized the use of a bi-factor confirmatory factor analysis (CFA) approach, where a model with a general MI factor and domain-specific factors is fit to the data, such as in the OMIS and EMIS-FR investigations (Tappenden et al., 2023; Thomas et al., 2023). This criticism stems from a belief in the need for a unidimensional scale to effectively assess MI (Norman et al., 2024). Other criticisms of bi-factor models more generally include a tendency to over-fit the data and lead to inflated estimates of model fit (e.g., Maydeau-Olivares & Coffman, 2006; Morgan et al., 2015).

The MIA-PSP was developed by Roth and colleagues (2022) in an attempt to bridge the divide between the phenomenological and syndromal perspectives using a population-specific approach, distinguishing itself from both the OMIS and MIDS (Norman et al., 2024; Thomas et al., 2023). It further separates itself from the EMIS-FR in that the item content was specifically developed within public safety populations, rather than serving as an adaptation from the military context (Roth et al., 2022; Tappenden et al., 2023). The MIA-PSP is a 17-item self-report

measure intended to capture the facets of MI among PSP, namely transgressions (acts of commission or omission) and betrayals, as well as the emotional and behavioural experience of MI (Roth et al., 2022). Utilizing a heterogenous sample of 270 Canadian and American firefighters, paramedics, police officers, and dispatchers, a three-factor model for the scale was derived from parallel analysis and supported by exploratory factor analysis (EFA). The three factors were named *Emotional Sequelae* (7 items; e.g., "I am bothered by feelings of shame"), *Perpetrations* (5 items; e.g., "I am bothered that I chose to protect myself rather than protecting another person"), and *Betrayals* (5 items; e.g., "I am bothered that my employer did not provide sufficient training, which resulted in negative consequences"). The Emotional Sequelae factor reflects a constellation of negative emotions which might result from pMIE exposure, whereas the Perpetrations factor represents transgression-based pMIES such as commissions or omissions, with the Betrayals factor defined by betrayal-based pMIES from institutions or employers. The subscales demonstrated good internal consistency (Cronbach's $\alpha = 0.86$ to 0.89), and the items loaded well on their respective factors.

Initial validation work by Roth and colleagues (2022) demonstrated convergent validity through positive correlations of the MIA-PSP subscales with the MIES, a measure of MI initially developed for military populations as noted above (Nash et al., 2013). There was also evidence provided by Roth and colleagues (2022) for concurrent validity with other trauma-related outcomes, including positive associations between each of the MIA-PSP subscales and measures of trauma-related shame (Øktedalen et al., 2014), guilt (Kubany et al., 1996), PTSD (Weathers et al., 2013), depression and anxiety (Lovibond & Lovibond, 1995), dissociation (Briere, 2002), and functional impairment (WHO, 2010).

Regarding other MI-specific outcomes in PSP populations, other measures of MI have separately been linked to burnout (Thomas et al., 2023) and posttraumatic cognitions (Norman et al., 2024). There is also some evidence to suggest that MI is related to meaning making among police officers (Mordeno et al., 2022), which is hypothesized to underpin the process of posttraumatic growth. Posttraumatic growth reflects the positive changes that occur in ones' life following trauma (Tedeschi & Calhoun, 1996), where meaning making refers to the way in which people understand and interpret current life situations and the world based on past experience and acquired knowledge (Park & George, 2013). While a potentially promising area for research, to date, there remains little understanding of the direct relationship between MI and posttraumatic growth among PSP, as well as the impact of MI on overall life satisfaction.

The Present Study

A major limitation of the initial validation work by Roth and colleagues (2022) is their analyses did not extend beyond an EFA framework, which allows items to influence more than one factor. Given the potential application of the scale within clinical settings to assess MI among PSP, it is imperative to evaluate the psychometric integrity of this scale. In fact, in a systematic review of scales assessing MI, the MIA-PSP was criticized for having not undergone rigorous psychometric testing (Houle et al., 2024). Further investigation into the psychometric properties of the scale is needed, including utilizing a confirmatory approach to assess model fit. Given the current debate surrounding measurement model examination, we took a two-step approach; first, we examined a one-factor CFA model to assess the uni-dimensionality of the scale, and then three-factor CFAs to examine whether the proposed underlying factors derived from the initial validation study by Roth and colleagues (2022) are replicable. To validate the

scale specifically among police officers, we obtained a large homogenous sample of police officers, not one with mixed PSP as was done in the Roth and colleagues (2022) study.

The second major component of the study involved assessing measurement invariance across important individual characteristics including gender and years of service. Previous research has suggested some differences in the experience of MI across gender (Maguen et al., 2020). For example, betrayal-based pMIES were more consistently associated with functional impairment in women whereas perpetration-based pMIES were more consistently associated with functional impairment in men (Maguen et al., 2020). Years of service was also considered highly relevant given the likelihood of pMIE exposure naturally increasing the longer an officer is in uniform. Within the literature on PTSD, links between years of service and PTSD among police officers have been identified (Horswill et al., 2021).

Finally, we examined the concurrent validity of the MIA-PSP in predicting traumatic stress, trauma-related outcomes, and well-being, which has yet to be done in a police-specific population. It was expected that the usefulness of the MIA-PSP would be clearly evident.

Methods

This online study was approved by the York University Research Ethics Board (REB #2022-350) and received institutional approval from the participating police services. Support from the participating services was administrative in nature, and they did not impose any limitations surrounding study design or focus. The data used in this paper are part of a larger study examining psychosocial risk and resiliency factors for trauma-related outcomes among Canadian police officers and civilian operational staff.

Participants & procedure

Participants were Canadian police officers recruited from 17 municipal and provincial police services across Ontario. Following institutional approval, the police services disseminated the study information and anonymous survey link to its members who were offered the opportunity to voluntarily participate in the study. Exclusion criteria included the following: failing to complete the study, a rapid completion time of less than 15 minutes, and selecting the self-exclusion option at the end of the study to indicate they did not pay sufficient attention for their data to be included. Items from the Conscientious Responders Scale (Marjanovic et al., 2014) were distributed throughout the survey battery to identify random responders; failing more than 2 attention checks resulted in data being excluded. Of the 383 officers who completed the study, 16 were excluded prior to the data analyses based on failed validity checks (n = 9) and self-exclusions (n = 7). Therefore, a total of 367 officers were included in the analyses.

The median age of participants fell within the 46-to-50-year age bracket (officers indicated their age by selecting an age bin for anonymity purposes). Most participants identified as men (72.5%), heterosexual (95.4%), non-racialized (89.1%), married/cohabiting (87.2%), and holding a college or university degree (72.8%). In terms of employment status, most participants indicated working full-time (97.5%) at the rank of Constable (41.1%), in an urban environment (44.1%), and with a mean of 18.7 years of service (SD = 9.1) (see Table 1 for full sample demographics).

After obtaining informed consent, participants completed a series of questionnaires including a demographics measure, various psychosocial measures, and measures of trauma-related outcomes including the MIA-PSP (see below for descriptions of the measures used in the present analyses). In exchange for their participation, participants had the opportunity to opt in to a gift card lottery for the chance to win one of twenty $50 coffee shop gift cards.

Table 1

Sociodemographic Characteristics

Variable	*n*	%
Age		
18 to 25	5	1.4%
26 to 30	25	6.8%
31 to 35	38	10.4%
36 to 40	46	12.5%
41 to 45	56	15.3%
46 to 50	81	22.1%
51 to 55	85	23.2%
>55	31	8.4%
Sex		
Male	267	72.8%
Female	100	27.2%
Gender Identity		
Man	266	72.5%
Woman	100	27.2%
Non-Binary	1	0.3%
Two-Spirit	0	0.0%
I do not identify with the above	0	0.0%
Sexual Orientation		
LGBTQ2+	10	2.7%
Heterosexual	350	95.4%
Prefer not to answer	7	1.9%
Racialized Person		
Yes	24	6.5%
No	327	89.1%
Prefer not to answer	16	4.4%
Relationship Status		

Single	21	5.7%
Married/cohabiting	320	87.2%
Separated/divorced	25	6.8%
Widowed	1	0.3%
Parental Status		
Yes	297	80.9%
No	70	19.1%
Education		
Less than High School	0	0.0%
High School Diploma	13	3.5%
One or two year post high school but not college	6	1.6%
Trade or professional school diploma	13	3.5%
Some college or university education	48	13.1%
College or University Degree (Bachelors)	267	72.8%
Post-graduate work	5	1.4%
Post-graduate degree	15	4.1%
Employment		
Full-time	358	97.5%
Part-time	6	1.6%
Retired	3	0.8%
Rank		
Constable	151	41.1%
Constable Detective	72	19.6%
Forensic Constable	2	0.5%
Sergeant	76	20.7%
Acting Sergeant	2	0.5%
Staff Sergeant	32	8.7%
Detective Sergeant	5	1.4%
Staff & Executive Leadership (i.e., Inspector, Staff Inspector, Superintendent, Staff Superintendent, Chief Superintendent, Deputy Chief of Police/Commissioner, Chief of Police/Commissioner)	26	7.1%
Prefer not to answer	1	0.3%
Years of Service		
<5 years	33	9.0%

5 to 10 years	43	11.7%
11 to 15 years	54	14.7%
16 to 20 years	61	16.6%
21 to 25 years	89	24.3%
26 to 30 years	62	16.9%
31 to 40 years	18	4.9%
>40 years	5	1.4%
Prefer not to answer	2	0.5%
Service Environment		
Urban	162	44.1%
Suburban	69	18.8%
Rural	133	36.2%
Indigenous Reserve	3	0.8%

Materials

The Moral Injury Assessment for Public Safety Personnel (MIA-PSP; Roth et al., 2022) is described in detail above and is comprised of three factors, named *Emotional Sequelae* (7 items; e.g., "I am bothered by feelings of shame"), *Perpetrations* (5 items; e.g., "I am bothered that I chose to protect myself rather than protecting another person"), and *Betrayals* (5 items; e.g., "I am bothered that my employer did not provide sufficient training, which resulted in negative consequences"). Each item has a six-point Likert scale ranging from "Strongly disagree (1)" to "Strongly agree (6)." Subscale scores are calculated as sum of the scores from items within a given subscale. See results for findings regarding reliability and validity of the MIA-PSP subscale scores.

The Posttraumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual for Mental Health Disorders, Fifth Edition (PCL-5; Weathers et al., 2013) is a 20-item measure assessing the severity of PTSD symptoms following the DSM-5 criteria (APA, 2013). This includes criteria for the following symptom clusters: intrusive symptoms (5 items; e.g., "repeated, disturbing, and unwanted memories of the stressful experience"), avoidance (2 items; e.g., "avoiding memories, thoughts, or feelings related to the stressful experience"), negative alterations in cognition and mood (7 items; e.g., "blaming yourself or someone else for the stressful experience or what happened after it"), and arousal and reactivity (6 items; e.g., "feeling jumpy or easily startled"). Respondents assess symptom experiences over the past month. Items are scored on a five-point Likert-type scale ranging from "Not at all (0)" to "Extremely (4)," with total scores ranging from 0 to 80; greater scores indicate heightened symptom severity. The scale has demonstrated strong convergent validity with other measures of trauma (Blevins et al., 2015). The coefficient ω reliability estimate for this scale was 0.95.

The Posttraumatic Cognitions Inventory - 9 Item (PTCI-9; Wells et al., 2019). A brief version of the original PTCI (Foa et al., 1999) was used to identify negative posttraumatic cognitions which are believed to lead to the development and maintenance of PTSD symptoms. It is a 9-item self-report questionnaire measured on a 7-point Likert scale ranging from "Totally disagree (1)" to "Totally agree (7)." Fit statistics for the 3-factor structure have been identified as strong in the brief version, including negative cognitions about the self (e.g., "I have no future"), the world (e.g., "People can't be trusted"), and self-blame (e.g., "The event happened because of the way I acted"). Total and subscale scores are derived from a mean of item scores, with higher scores reflecting greater struggles with negative posttraumatic cognitions. The coefficient ω reliability estimate in the present study was 0.83.

The Posttraumatic Growth Inventory - Short Form (PTGI; Cann et al., 2010) is a 10-item self-report questionnaire derived from the original 21-item scale (Tedeschi & Calhoun, 1996). It assesses the degree to which an individual has experienced positive outcomes in the aftermath of traumatic events (e.g., "Appreciating every day"). Participants respond on a 6-point Likert-type scale ranging from "I did not experience this change as a result of this incident (0)" to "I experienced this change to a great degree as a result of this incident (5)." An equivalent five-factor structure of this scale is found in the short form: new possibilities, ability to relate to others, personal strength, appreciation for life, and spiritual change. Total and subscale scores are a sum of item scores, with a greater score indicating heightened posttraumatic growth. Total scores can range from 0 to 50. The coefficient ω reliability estimate for this scale was 0.90.

The Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001) is a 9-item self-report scale assessing depressive symptoms in the previous two weeks (e.g., "little interest or pleasure in doing things") following DSM-5 criteria (APA, 2013). Items are scored on a relative

frequency scale ranging from “Not at all (0)” to “Nearly every day (3).” The scale is scored as a sum of item scores with total scores ranging from 0 to 27; higher scores indicate greater symptom severity. The scale has demonstrated good criterion and construct validity. The coefficient ω reliability estimate for this scale was 0.90 with the current data.

The Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006) is a 7-item self-report scale assessing generalized anxiety symptoms in the previous two weeks (e.g., “not being able to stop or control worrying”) following DSM-5 criteria (APA, 2013). Items are scored on a relative frequency scale ranging from “Not at all (0)” to “Nearly every day (3).” The scale is scored as a sum of item scores with total scores ranging from 0 to 21; higher scores indicating greater symptom severity. The scale has demonstrated good criterion and construct validity. The coefficient ω reliability estimate for this scale was 0.92.

The Burnout Measure - Short Version (BMS; Malach-Pines, 2005) is a 10-item self-report scale derived from the 21-item Burnout Measure (Pines & Aronson, 1988). Individuals rate their level of physical, emotional, and mental fatigue on a 7-point Likert scale ranging from “Never (1)” to “Always (7)” responding to feelings associated with work such as “Tired” or “Worthless/feel like a failure.” A total score is derived from a mean of item scores, with greater scores meaning greater severity of burnout. In the present study, the coefficient ω reliability estimate for this scale was 0.92.

The Satisfaction with Life Scale (SWLS; Diener et al., 1985) is a 5-item self-report scale assessing the degree to which individuals are content with their lives. Items (e.g., “In most ways my life is close to ideal.”) are responded to on a 7-point Likert scale ranging from “Strongly disagree (1)” to “Strongly agree (7).” A total score is derived from a sum of item scores, with

scores ranging from 7 to 35, with higher scores reflecting greater life satisfaction. The coefficient ω reliability estimate for this scale was 0.93 with the current data.

Statistical analyses

MPlus version 8.0 (Muthén & Muthén, 2017) and SPSS version 29 (IBM Corp.) were utilized to conduct the data analysis for this psychometric study. Seven different participants missed a single scale item (PTGI: 2, PHQ-9: 2, GAD-7: 1, PTCI: 1, Burnout: 1). In these cases, the mean of the remaining items was used as the score for the missing item (i.e., individual mean replacement). Statistical assumptions were verified prior to conducting analyses. Data were relatively normal, assessed via visual inspection of histograms and Q-Q plots. Assumption of linearity was met based on visual inspection of scatter plots. For multicollinearity, correlations between independent variables were less than 0.8 and the variance inflation factor statistics were in the range of 1.18 to 1.26. Homoscedasticity was determined based on visual inspection of residual plots. Sensitivity analyses revealed that outliers (MIA-PSP Perpetrations: 4, PTCI-9: 3, PHQ-9: 1) did not significantly impact results and so were retained in the analyses as clinically meaningful.

Maximum likelihood (ML) estimation, given the continuous nature of MIA-PSP items, was used to fit the CFA one-factor and independent-clusters (i.e., characterized by a lack of cross-loadings; McDonald, 1999) three-factor models to the data. Modification indices for improved model fit were identified and applied only when they were theoretically and conceptually justified (e.g., common method variance, common cause of variance on two-like items). Absolute and relative fit indices were examined to assess model fit; guidelines for excellent model fit include a Comparative Fit Index (CFI) >0.95, root mean square error of approximation (RMSEA) <0.06, and standardized root mean squared residual (SRMR) <0.08,

whereas guidelines for good fit include a CFI >0.90 and RMSEA <0.08 (Hu & Bentler, 1999). The model χ^2 will be reported, but not relied upon given the large sample size. With respect to item-specific loadings, a good primary loading was considered >0.40 (Thompson, 2004).

After demonstrating acceptable model fit and an optimal factor structure, coefficient omega (ω) was used to examine the reliability of the subscales (Flora, 2020). Following internal reliability analyses, Pearson's correlations (*r*) were used to identify any relation between study variables, with effect sizes defined as 0.1 (small), 0.3 (medium), and 0.5 (large) based on Cohen (1992). We then continued the psychometric investigation with invariance testing. This was conducted across self-identified gender (men vs. women) and years of service (<20 vs. ≥20 years of service). Only one individual identified as non-binary, thus we were unable to examine measurement invariance beyond men vs. women. For the purposes of measurement invariance testing, the years of service cut-off was determined using a median split (median = 20). Two participants preferred not to disclose their years of service, and so were not included in this part of the analysis. We utilized a four-step process: separately testing the model in each group to determine adequate model fit, then proceeding with configural, metric, and scalar invariance testing (Putnick & Bornstein, 2016). We utilized a change in CFI <0.01 and an RMSEA increase below 0.01 as indicating no appreciable difference in the nested models (Chen, 2007; Cheung & Rensvold, 2002). Due to the large sample size, the χ^2 difference test is reported but not relied upon.

Where measurement invariance was demonstrated, independent sample *t*-tests (based on non-significant Levene's test) identified any meaningful magnitude differences in observed subscale scores across these groups. Due to unequal sample sizes, effect sizes were calculated using Hedge's *g*, with cut-offs of 0.2 (small), 0.5 (medium), and 0.8 (large) (Lakens, 2013).

Finally, observed subscale scores based on the primary factor loadings in the CFA model were used within multiple linear regression analyses to assess the validity of the MIA-PSP subscales in predicting other trauma-related outcomes and well-being constructs. For all tests, α was set at 0.05.

Results

Measurement model examination

To determine the utility of the total MIA-PSP score, a one-factor CFA was applied to the data and revealed inadequate fit according to model fit statistics (see Table 2 for all model fit statistics). The overall fit of the uncorrelated three-factor independent clusters CFA was better, but still inadequate. Given that these factors are theoretically related to the same construct of MI, inter-factor correlations were allowed in a correlated three-factor model, which provided significantly better—but still inadequate—fit than the uncorrelated three factor model [$\Delta\chi^2(3) = 109.26$, $p < 0.001$, ΔCFI = 0.029]. Modification indices suggested correlating errors between specific pairs of items within a single factor, including items 1 with 2 and 4 with 5 within the Emotional Sequelae factor, and item 13 with 14 within the Perpetrations factor (see Table 3 for item descriptions). Given the theoretical underpinnings of primary and secondary emotions of sadness and anger, the often-intertwined experience of shame and guilt, and the similar content in items 13 and 14, there was believed to be a common cause of variance between these pairs of items (Greenberg, 2011). Thus, correlating errors in the analysis was deemed reasonable and justified.

As a result of these modifications, the final correlated three-factor independent clusters CFA provided excellent fit to the data, and improved fit in comparison to the unmodified correlated three-factor CFA model [$\Delta\chi^2(3) = 179.96$, $p < 0.001$, ΔCFI = 0.048]. See Table 3 for a

comparison of the CFA model solutions and factor intercorrelations. In the final model, primary loadings for all items were strong on their respective factors, ranging from 0.59 to 0.87, reflecting good simple structure. Further, most of these primary loadings were stronger than the loadings presented from the original EFA model (Roth et al., 2022). Factor inter-correlations were significant and moderate in size, suggesting they are related but assess distinct aspects of MI. Using observed subscale scores for the MIA-PSP, the Emotional Sequelae ($\omega = 0.92$), Perpetrations ($\omega = 0.82$), and Betrayals ($\omega = 0.89$) subscales demonstrate strong internal consistency, similar to findings from Roth and colleagues (2022). See Table 4 for means, standard deviations, reliability estimates, and correlations between study variables. In comparison to the means from the initial validation study among Canadian and American PSP, the means in the present sample of Canadian police officers were lower on all the subscales; more specifically, they were substantially lower on the Emotional Sequelae and Perpetrations factors.

Table 2

Model Fit Summary

Model	# parameters	χ^2	*df*	CFI	RMSEA [90% CI]	SRMR
One-Factor CFA	51	1697.401	119	0.574	0.190 [0.182, 0.198]	0.154
Three Factor CFA	51	550.972	119	0.883	0.099 [0.091, 0.108]	0.176
Correlated Three-factor CFA	54	441.712	116	0.912	0.087 [0.079, 0.096]	0.049
Modified Correlated Three-factor CFA	**57**	**261.752**	**113**	**0.960**	**0.060 [0.050, 0.069]**	**0.045**
Gender Invariance						
Men	57	241.151	113	0.956	0.065 [0.054, 0.077]	0.051
Women	57	177.734	113	0.923	0.076 [0.054, 0.096]	0.066
Gender Configural	114	418.885	226	0.949	0.068 [0.058, 0.078]	0.055
Gender Metric	100	440.709	240	0.947	0.068 [0.058, 0.077]	0.058
Gender Scalar	86	461.905	254	0.945	0.067 [0.057, 0.077]	0.059
Years of Service Invariance						
Below 20 years	57	238.229	113	0.932	0.079 [0.065, 0.093]	0.064
20 years and above	57	191.826	113	0.959	0.061 [0.046, 0.075]	0.048
Years Configural	114	430.055	226	0.946	0.070 [0.060, 0.080]	0.056
Years Metric	100	463.864	240	0.941	0.071 [0.062, 0.081]	0.066
Years Scalar	86	485.586	254	0.939	0.070 [0.061, 0.080]	0.067

Note. df, degrees of freedom; CFI, comparative fit index; RMSEA, root mean square error of approximation; CI, confidence interval, SRMR, standardized root mean square residual; CFA, confirmatory factor analysis.
$p < 0.001$ for all χ^2 tests.
Model utilized in invariance testing is in bold font.

Table 3

Factor Solutions for the MIA-PSP

Item	One-Factor CFA	Correlated Three-Factor CFA			
		F1 (ES)	F2 (P)	F3 (Bl)	*R2*
1. I am bothered by feelings of sadness.	0.75	**0.73**	0.00	0.00	0.53
2. I am bothered by feelings of anger.	0.75	**0.73**	0.00	0.00	0.53
3. I am bothered by feelings of self-hatred.	0.84	**0.87**	0.00	0.00	0.76
4. I am bothered by feelings of guilt.	0.84	**0.83**	0.00	0.00	0.69
5. I am bothered by feelings of shame.	0.86	**0.86**	0.00	0.00	0.73
6. I am bothered by feelings of disgust.	0.81	**0.83**	0.00	0.00	0.68
7. I am bothered by feelings of fear.	0.69	**0.69**	0.00	0.00	0.48
8. I am bothered because I was made to ostracize a coworker as a Whistle Blower.	0.33	0.00	**0.77**	0.00	0.59
9. I am bothered because I was made to blame innocent coworker(s) for the institution's transgression (scapegoating).	0.32	0.00	**0.77**	0.00	0.60
10. I am bothered that I had to take disciplinary action against a staff member/coworker.	0.26	0.00	**0.59**	0.00	0.35
11. I am bothered that I chose to protect myself rather than protecting another person (e.g., leaving a house fire).	0.35	0.00	**0.69**	0.00	0.47
12. I am bothered that I had to hurt another person in order to do my job (e.g., hurting an individual to save another life).	0.43	0.00	**0.66**	0.00	0.44
13. I am bothered by the lack of institutional supports to assist the public safety personnel/first responders who are expected to expose themselves to highly stressful incidents.	0.36	0.00	0.00	**0.69**	0.48

14. I am bothered that my employer did not provide sufficient training, which resulted in negative consequences (e.g., personal mental health, accidents, death).	0.40	0.00	0.00	**0.74**	0.55
15. I am bothered that my management or company does not uphold its values/philosophy.	0.37	0.00	0.00	**0.82**	0.68
16. I am bothered that my employer does not respect or recognize the work I do.	0.42	0.00	0.00	**0.85**	0.73
17. I am bothered that my employer does not acknowledge those that have died as a result of a mental illness acquired through the workplace.	0.38	0.00	0.00	**0.74**	0.55
Factor Inter-Correlations					
1. Emotional Sequelae		--			
2. Perpetrations		0.394**	--		
3. Betrayals		0.391**	0..331**	--	

Notes. ES, Emotional Sequelae; P, Perpetrations; B, Betrayals

Standardized factor loadings are presented.

All primary factor loadings (bold font) were significant ($p < 0.01$).

**$p < 0.01$

Table 4

Descriptive Statistics

Variable	*M*	*SD*	Ω	1	2	3	4	5	6	7	8	9	10
MIA-PSP													
1. Emotional Sequelae	16.07	7.94	0.92	-									
2. Perpetrations	7.65	4.16	0.82	0.353**	-								
3. Betrayals	16.49	7.09	0.89	0.377**	0.281**	-							
4. PCL-5 Total	23.10	17.66	0.95	0.608**	0.250**	0.400**	-						
5. PTCI-9 Total	2.71	1.00	0.83	0.558**	0.200**	0.363**	0.584**	-					
6. PTGI Total	19.00	11.05	0.90	-0.055	0.121*	0.160**	0.084	0.005	-				
7. PHQ-9 Total	5.91	5.57	0.90	0.633**	0.178**	0.373**	0.700**	0.557**	-0.092	-			
8. GAD-7 Total	5.36	5.13	0.92	0.617**	0.163**	0.290**	0.665**	0.460**	-0.042	0.723**	-		
9. Burnout Total	3.26	1.13	0.92	0.588**	0.188**	0.479**	0.581**	0.562**	-0.067	0.691**	0.562**	-	
10. SWLS Total	24.15	6.59	0.93	-0.436**	-0.114*	-0.282**	-0.439**	-0.469**	0.201**	-0.556**	-0.393**	-0.525**	-

Notes. M, Mean; SD, Standard deviation; MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PCL-5, Posttraumatic Stress Disorder Checklist for DSM-5; PTCI-9, Posttraumatic Cognitions Inventory-9 Item; PTGI, Posttraumatic Growth Inventory-Short Form; PHQ-9, Patient Health Questionnaire - 9; GAD-7, Generalized Anxiety Disorder - 7; SWLS, Satisfaction with Life Scale

*$p < 0.05$ **$p < 0.01$

Invariance testing

Gender

The baseline model was first examined separately across self-reported gender, and the fit was good for both the men and women (see Table 2). Configural invariance was then tested, and fit continued to be good, indicating factor structure equivalency across gender. Good model fit when testing metric invariance suggested equivalency of factor loadings. Finally, scalar invariance was tested, and the model fit remained good, suggesting equivalent intercepts across gender. Comparing differences in model fit across invariance thresholds revealed no appreciable differences between metric and configural models [$\Delta\chi^2(14) = 21.824$, $p = 0.082$, ΔCFI = -0.002, ΔRMSEA = 0.000] nor between metric and scalar models [$\Delta\chi^2(14) = 21.196$, $p = 0.097$, ΔCFI = -0.002, RMSEA *improved* for the scalar invariance model]. These results suggest that the MIA-PSP subscales measure the corresponding factors equivalently between men and women.

Years of service

We further examined invariance of the MIA-PSP between officers with relatively lower and higher years of service (see Table 2). Fit was good both for officers with less than 20 years of service and those with 20 or more years of service. Model fit continued to be good when testing configural, metric, and scalar invariance, suggesting equivalent factor structure, loadings, and intercepts across groups. There were no substantial changes in model fit between metric and configural models [$\Delta\chi^2(14) = 33.808$, $p = 0.002$, ΔCFI = -0.005, ΔRMSEA = 0.001] nor between metric and scalar models [$\Delta\chi^2(14) = 21.722$, $p = 0.085$, ΔCFI = -0.002, RMSEA *improved* for the scalar invariance model]. These results suggest that the MIA-PSP subscales measure the corresponding factors equivalently between officers with relatively lower and higher years of service.

Assessing moral injury across groups

Given evidence for measurement invariance across gender and years of service at the factor structure level, we tested observed scale score differences in MI across these groups. There were no significant differences between men and women on the Emotional Sequelae [$t(364) = -1.282$, $p = 0.201$, $g = 0.15$], Perpetrations [$t(364) = 0.868$, $p = 0.386$, $g = 0.10$], or Betrayals [$t(364) = -1.637$, $p = 0.102$, $g = 0.19$] subscales. There were also no significant differences between junior and veteran officers on the Emotional Sequelae [$t(365) = 1.076$, $p = 0.283$, $g = 0.11$] and Perpetrations [$t(365) = -0.880$, $p = 0.379$, $g = 0.09$] subscales. However, officers with relatively less years of service reported significantly greater Betrayals [$t(365) = 2.989$, $p = 0.003$, $g = 0.31$] than those with relatively higher years of service, with a small effect.

Concurrent validity

Observed subscale scores were utilized to assess the concurrent validity of the MIA-PSP subscales with measures of PTSD (PCL-5), posttraumatic cognitions (PTCI-9), posttraumatic growth (PTGI), depression (PHQ-9), anxiety (GAD-7), burnout, and satisfaction with life (SWLS). Prior to controlling for shared variance amongst the subscales through multiple linear regression, the correlation analyses demonstrate that greater Emotional Sequalae, Perpetrations, and Betrayals were significantly associated with heightened PTSD, posttraumatic cognitions, depression, anxiety, and burnout and lessened life satisfaction (see Table 4). Greater Perpetrations and Betrayals were also significantly associated with heightened posttraumatic growth.

Separate multiple linear regression models were estimated for each traumatic stress and related well-being outcome with the MIA-PSP subscales as simultaneous predictors (see Table 5 and 6 for unstandardized and standardized regression coefficients). Controlling for shared

variance between predictors, greater Emotional Sequelae and Betrayals significantly predicted greater PTSD, posttraumatic cognitions, depression, burnout, and lessened life satisfaction. In addition, greater Emotional Sequelae significantly predicted greater anxiety. Further, while greater Perpetrations and Betrayals significantly predicted greater posttraumatic growth, greater Emotional Sequelae significantly predicted lessened posttraumatic growth.

Table 5

Concurrent Validity of the MIA-PSP with Traumatic Stress Outcomes

MIA-PSP Factors	PTSD (PCL-5)					Posttraumatic Cognitions (PTCI-9)					Posttraumatic Growth (PTGI)				
	B	S.E.	*Z*	*p*	*B**	B	S.E.	*Z*	*P*	*B**	B	S.E.	*Z*	*p*	*B**
Emotional Sequelae	**1.180**	0.101	11.708	<0.001	**0.531**	**0.063**	0.006	10.463	<0.001	**0.499**	**-0.240**	0.079	-3.020	0.003	**-0.172**
Perpetrations	0.031	0.186	0.166	0.868	0.007	-0.006	0.011	-0.588	0.557	-0.027	**0.342**	0.146	2.343	0.019	**0.129**
Betrayals	**0.493**	0.110	4.483	<0.001	**0.198**	**0.026**	0.007	3.914	<0.001	**0.182**	**0.294**	0.087	3.398	0.001	**0.189**
R^2	0.404					0.339					0.055				

Notes. MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PCL-5, Posttraumatic Stress Disorder Checklist for DSM-5; PTCI-9, Posttraumatic Cognitions Inventory-9 Item; PTGI, Posttraumatic Growth Inventory-Short Form
Statistically significant beta coefficients are in
bold font.

Table 6

Concurrent Validity of the MIA-PSP with Well-Being Outcomes

MIA-PSP Factors	Depression (PHQ-9)					Anxiety (GAD-7)				
	B	S.E.	*Z*	*p*	*B**	B	S.E.	*Z*	*p*	*B**
Emotional Sequelae	**0.419**	0.031	13.451	<0.001	**0.597**	**0.396**	0.030	13.375	<0.001	**0.613**
Perpetrations	-0.108	0.057	-1.882	0.060	-0.081	-0.094	0.055	-1.719	0.086	-0.076
Betrayals	**0.134**	0.034	3.936	<0.001	**0.170**	0.058	0.032	1.792	0.073	0.080
R^2	0.427					0.389				

Notes. MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PHQ-9, Patient Health Questionnaire - 9; GAD-7, Generalized Anxiety Disorder-7; SWLS, Satisfaction with Life Scale
Statistically significant beta coefficients are in bold font.

Burnout					Life Satisfaction (SWLS)				
B	S.E.	*Z*	*p*	*B**	B	S.E.	*Z*	*p*	*B**
0.071	0.006	11.189	<0.001	**0.497**	**-0.336**	0.043	-7.775	<0.001	**-0.405**
-0.020	0.012	-1.754	0.079	-0.075	0.112	0.080	1.407	0.159	0.071
0.050	0.007	7.230	<0.001	**0.313**	**-0.138**	0.047	-2.926	0.003	**-0.149**
0.428					0.211				

Discussion

The current study held a primarily psychometric focus on the MIA-PSP, but also emphasized substantive findings in the connection of MI as assessed by the MIA-PSP and other trauma-related outcomes. Regarding the psychometric elements, the results of this study support the three-factor structure of the MIA-PSP (Roth et al., 2022) in a large sample of Canadian police officers using a CFA approach. Further, this paper is the first to present findings of measurement invariance across gender and years of service. At a substantive level, as we discuss below, findings also suggest the MIA-PSP subscales are related to other indicators of psychological distress including trauma-related and well-being outcomes as well as psychological growth.

Notably, to our knowledge, this paper is the first to present psychometric evidence of the MIA-PSP scale's underlying factor structure utilizing a confirmatory approach. Ultimately, CFA findings support the original three-factor model derived from EFA findings in the initial validation study conducted by Roth and colleagues (2022), with strong internal consistency amongst the derived subscales. EFA models allow for item cross-loadings, which is not commensurate with how the scale is scored in clinical practice, and so evidence in support of the three-factor structure using a CFA model provides clearer external validity for the scale. In our correlated three-factor model, we allowed for correlated error terms between items 1 with 2 and 4 with 5 within the Emotional Sequelae factor, and item 13 with 14 within the Perpetrations factor. According to findings obtained from the large police officer sample serving both urban and rural areas, we believe there to be a common cause of variance between these items based on emotion theory—primary and secondary emotions of sadness and anger, the often-intertwined experience of shame and guilt (Greenberg, 2011)—and the similar focus of items 13 and 14 on

the institution's failure to provide. Further replication work is needed to determine whether these modifications are sample-specific.

Responding to the proposed direction by Norman and colleagues (2024) towards a uni-dimensional assessment of MI, we evaluated a one-factor CFA model to the data which demonstrated poor fit. This may suggest that the total score on the scale is not as interpretable as the individual subscale scores. However, while the one-factor CFA had poor model fit, the derived factors of Emotional Sequelae, Perpetrations, Betrayals hold significant and moderate correlations. In fact, the correlated three-factor model demonstrated the best fit to the data, and an overall excellent fit according to model fit indices. This suggests the factors 'hang together' in such a way that they are tapping into a common construct. We tentatively propose that a barrier to uni-dimensionality here is the inclusion of items loading onto the Betrayals factor, as recent questions have been raised regarding whether it truly fits conceptually within the construct of MI (Norman et al., 2022). However, addressing this fully falls beyond the scope of the current study.

A further novel goal of the study was to address measurement invariance across gender and years of service, allowing for meaningful comparisons to be made across groups. Findings suggest that the MIA-PSP is operating in a consistent manner across men and women and across years of service bands. To our knowledge, we are the first to examine gender differences in the experience of MI among police officers. The fact that there were no significant differences on the MIA-PSP subscales is important and holds potential clinical relevance for treatment conceptualization and delivery across genders. While Maguen and colleagues (2020) did identify some gender differences in MI, they utilized a military veteran sample, which might suggest population specificity is important when considering such differences. Notably, officers with relatively lower years of service endorsed greater struggles with Betrayals in comparison to the

officers with relatively higher years of service. This difference was associated with a small effect, suggesting it might not be "clinically meaningful." However, there are several possible explanations for this finding, which deserves further research. Relatively junior officers may be more disclosing of recent betrayal experiences, while more senior officers, amidst their longevity of their service, have remained on the job either having not experienced betrayal or have in other ways come to terms with the shortcomings of the institution in which they serve. Where they may have initially been greatly distressed by this, they come to put their 'guard up' not only when responding to calls but also when navigating the policing environment.

Alongside support for good structural validity of the MIA-PSP, the current findings provide evidence in support of the concurrent validity of the scale within a sample of police officers on measures of clinical symptoms. Consistent with the outcomes determined in the initial validation study by Roth and colleagues (2022), we found both the Emotional Sequelae and Betrayals subscales to be positive predictors of PTSD and depression, while the Emotional Sequelae subscale was also found to be a positive predictor of anxiety. The initial validation study did not control for shared variance amongst the subscales, so demonstrating that the Emotional Sequelae and Betrayals subscales seem to hold unique predictive power is notable (Roth et al., 2022). These subscales are also positive predictors of posttraumatic cognitions and burnout, following other measures which have evidenced associations with these outcomes among PSP (Norman et al., 2024; Thomas et al., 2023), with novel findings surrounding these subscales negatively predicting overall life satisfaction, which has not been demonstrated previously to our knowledge. These findings also offer some support for the uniqueness of the MI construct; if the Emotional Sequelae and Betrayals subscales were most closely related to these other mental health outcomes, then perhaps the Perpetrations component is most central to

differentiating MI as a unique psychological condition in its own right. Alongside these multiple linear regression findings, it is notable to highlight the pattern of correlations between said factors and mental health outcomes, particularly their magnitude. The magnitude of the correlations between Emotional Sequelae and PTSD, posttraumatic cognitions, depression, anxiety, and burnout were large. This is suggestive of the relevance of grappling with challenging negative emotions across disorders (Greenberg, 2011). The much smaller magnitude of the correlations between the Perpetrations subscale and these mental health outcomes further highlights its differentiation within the MI construct.

In line with some evidence suggesting that MI is, perhaps most poignantly, related to meaning making among police officers (Mordeno et al., 2022), the Perpetrations and Betrayals subscales were positive predictors of posttraumatic growth, with the Emotional Sequelae subscale a negative predictor. Speculatively, the pattern is one that suggests as one comes to emotionally process the traumatic experiences of Perpetrations and Betrayals, police officers who continue to serve somehow come to make meaning and even find growth out of these experiences, perhaps analogously to transforming emotion as in emotion-focused therapy (Greenberg, 2011).

Implications

The findings from the current study demonstrate the MIA-PSP is an internally consistent, structurally valid measure with that is measurement invariant across important clinical characteristics such as gender and years of service. Concurrent validity was also demonstrated with this measure alongside other measure of psychological distress. Overall, this lends support for the use of the scale within applied settings. When the scale is applied in a clinical setting, we tentatively suggest focusing on and interpreting the subscales separately rather than the total

score, as the one-factor CFA lacked statistical support. However, the derived factors of Emotional Sequelae, Perpetrations, and Betrayals hold significant and moderate correlations. Thus, future replication work is needed to further clarify the most appropriate means of scoring and interpreting the scale. Further, it is notable that the means for the Emotional Sequelae, Perpetrations, and Betrayals factors were all lower in this sample of Canadian police officers than in the original study which utilized a heterogenous sample of American and Canadian PSP (Roth et al., 2022). We suggest that the means and standard deviations in our study may serve as preliminary norms for the scale in its use among Canadian police officers.

Certain findings offer theoretical implications for the conceptual framework of MI. As mentioned above, considering the Emotional Sequelae and Betrayals subscales were most closely related to the other mental health outcomes examined in this study, the *Perpetrations* component might possibly be the key facet differentiating MI as a unique psychological condition in its own right. This deserves further study and investigation.

Strengths and Limitations

A major strength of this study is the large sample of police officers across the career span. The scale was originally developed utilizing a heterogenous sample of PSP, while the current study investigated how well the factor structure holds up within a specific occupational group such as police officers, with their own unique challenges and risks for exposure to pMIEs (Angehrn et al., 2020; Norberg, 2013; Papazoglou, 2013). That being said, some findings from the present study may stem from this population specificity and may not be entirely generalizable to other occupations under the PSP umbrella. Correlating error terms was believed to be justified based on a common cause of variance, but the risk in utilizing modifications is they can sometimes turn out to be sample-specific. Further, we were limited in our ability to analyze

measurement invariance beyond two gender categories of men and women, although this is reflective of the current PSP landscape (e.g., Roth et al., 2022; Norman et al., 2024). Another limitation is the use of only self-report questionnaires, which can involve biased responding in providing retrospective reports or due to social desirability. A further limitation is we did not include other scales assessing MI and thus could not adequately examine convergent validity.

Future Directions

As the scale was developed among the broader framework of PSP, future work should incorporate a broader spectrum of PSP to provide further evidence in support of the psychometric properties of the scale. Further, demonstrating measurement invariance across occupational groups would be useful to make meaningful comparisons across occupations with an eye to tailoring treatment approaches. Given that MI is an inherently clinical construct, future work should investigate the utility of the MIA-PSP within the clinical context. For example, longitudinal measurement invariance of the MIA-PSP should also be examined among treatment-seeking PSP, as it is an important precondition to assessing changes in MI over the course of clinical interventions.

Conclusion

This study is the first to examine the structural validity of the MIA-PSP using CFA modelling and in a sample of police officers. This study extends original validation work by Roth and colleagues (2022), finding support for a correlated three-factor MI model of Emotional Sequelae, Perpetrations, and Betrayals. Findings also provide evidence that the MIA-PSP is measurement invariant across individual characteristics such as gender and years of service. It further lends support for the concurrent validity of the scale, finding the Emotional Sequelae and Betrayals subscales are uniquely associated with trauma and well-being outcomes when

controlling for shared variance amongst the subscales. This study offers some support for the psychometrically sound nature of the MIA-PSPS among police officers, with an eye to integrating the scale into the clinical context in order to better support officers struggling with MI.

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Chapter 3: Risk and Resiliency in Police Officer Stress

As mentioned in the general introduction, further research is needed to better understand the psychosocial risk and resiliency factors that are clinically relevant targets in the development of trauma-related mental health outcomes. In general, there remains a paucity of knowledge surrounding the connection between ACEs with life satisfaction and burnout, social support with MI, and job satisfaction with MI and posttraumatic growth. Within Canadian police populations specifically, a further understanding of the connection between job satisfaction and social support with PTSD, depression, anxiety, burnout, and life satisfaction is needed. Further research in police populations is needed surrounding the relationships between self-compassion with MI and posttraumatic growth, with a current limited understanding of the role of self-compassion in the aftermath of trauma exposure among Canadian police officers. The psychosocial variables of grit, work mattering, and socially prescribed perfectionism have yet to be studied in police populations whatsoever, with mattering and anti-mattering examined only once in the U.S. Public trustworthiness-benevolence and posttraumatic cognitions remain unstudied among police officers for the trauma-related mental health outcomes investigated in the current study. Here, we investigate these risk and resiliency factors from both a categorical (i.e., probable vs. non-probable PTSD) and dimensional (i.e., severity of PTSD, MI, depression, anxiety, burnout and degree of life satisfaction and posttraumatic growth) framework, which may offer unique avenues for understanding their role. Given significant findings for these various risk and resiliency factors, we can identify targets for future research and potential clinical intervention.

Research Questions

1. Are the hypothesized risk factors (years of service, organizational and operational stress, ACEs, socially prescribed perfectionism, anti-mattering, posttraumatic cognitions) heightened in those with probable PTSD?
2. Are the hypothesized resiliency factors (social support, mattering, work mattering, job satisfaction, self-compassion, grit, public benevolence) lessened in those with probable PTSD?
3. Do the hypothesized risk factors (years of service, organizational and operational stress, ACEs, socially prescribed perfectionism, anti-mattering, posttraumatic cognitions) predict negative psychological outcomes (PTSD, anxiety, depression, MI, burnout)?
4. Do the hypothesized resiliency factors (social support, mattering, work mattering, job satisfaction, self-compassion, grit, public benevolence) buffer against negative psychological outcomes (PTSD, anxiety, depression, MI, burnout)?
5. Do the hypothesized risk factors (years of service, organizational and operational stress, PTSD severity, ACEs, socially prescribed perfectionism, anti-mattering, posttraumatic cognitions) inhibit posttraumatic growth and life satisfaction?
6. Do the hypothesized resiliency factors (social support, mattering, work mattering, job satisfaction, self-compassion, grit, public benevolence) facilitate posttraumatic growth and life satisfaction?

Hypotheses

1. In addition to heightened years of service, organizational and operational stress, and ACEs, which have been somewhat established as risk factors for PTSD in police populations, we hypothesize that those with probable PTSD will have heightened anti-

mattering, socially prescribed perfectionism, and posttraumatic cognitions in comparison to those with non-probable PTSD.

2. In addition to social support, job satisfaction, and self-compassion which have some established evidence as resiliency factors for PTSD among police, we hypothesize that mattering, work mattering, grit, and public benevolence will be lessened in those with probable PTSD in comparison to those with non-probable PTSD.
3. In addition to years of service, organizational and operational stress, and ACEs, which have been somewhat established as risk factors in police populations, we hypothesize that heightened anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions will be associated with elevated symptoms of PTSD, MI, generalized anxiety, depression, and burnout above and beyond the effects of years of service, organizational and operational stress, social support, self-compassion, job satisfaction, and ACEs.
4. In addition to social support, job satisfaction, and self-compassion which have some established evidence as resiliency factors among police, we hypothesize that heightened mattering, work mattering, grit, and public benevolence will be associated with lessened symptoms of PTSD, MI, anxiety, depression, and burnout above and beyond the effects of years of service, organizational and operational stress, social support, self-compassion, job satisfaction, and ACEs.
5. In addition to years of service, organizational and operational stress, and ACEs, which have been somewhat established as risk factors in police populations for inhibiting posttraumatic growth and life satisfaction, we hypothesize that heightened socially prescribed perfectionism, anti-mattering, and posttraumatic cognitions will be associated with lessened posttraumatic growth and life satisfaction above and beyond the effects of

years of service, PTSD severity, organizational and operational stress, social support, self-compassion, job satisfaction, and ACEs.

6. In addition to social support and self-compassion which have some evidence as resiliency factors in facilitating posttraumatic growth and life satisfaction among police officers, we hypothesize that heightened job satisfaction, mattering, work mattering, grit, and public benevolence will be associated with lessened posttraumatic growth and life satisfaction, above and beyond the effects of years of service, PTSD severity, organizational and operational stress, social support, self-compassion, job satisfaction, and ACEs.

Methods

This online study was approved by the York University Research Ethics Board (REB #2022-350) and received institutional approval from the participating police services. Support from the participating services was administrative in nature, and they did not impose any limitations surrounding study design or focus.

Participants & Procedure

Participants were Canadian police officers recruited from 17 municipal and provincial police services across Ontario. Following institutional approval, the police service disseminated the study information and anonymous survey link to its members who were offered the opportunity to voluntarily participate in the study. The study data were anonymous and housed on the Qualtrics platform, a secure server following Canadian data storage and security guidelines.

Following online informed consent, the officers completed a survey battery (outlined below) aimed to assess probable risk and resiliency factors, and trauma-related psychological outcomes. The survey required approximately 30 to 45 minutes to complete. In exchange for their participation, participants had the opportunity to opt in to a gift card lottery for the chance to win one of twenty $50 coffee shop gift cards.

Exclusion criteria included the following: failing to complete the study, failing more than two attention checks—where items from the Conscientious Responders Scale (Marjanovic et al., 2014) were distributed throughout the survey battery to identify random responders—a rapid completion time of less than 15 minutes, and selecting the self-exclusion option at the end of the

study to indicate they did not pay sufficient attention for their data to be included. Of the 383 officers who completed the study, 16 were excluded prior to data analyses based on failed validity checks (n = 9) and self-exclusions (n = 7). Therefore, a total of 367 officers were included in the analyses.

Drawn from the latest 2023 Statistics Canada data, approximately 1,341 officers were serving in the 16 municipal police services recruited from the study, with approximately 6,135 serving in the OPP (OPP, 2024; Statistics Canada, 2024a). Thus, 383 of the approximately 7,476 officers, or roughly 5.12%, participated in the current study.

As described in Chapter 2, the median age of police officers fell within the 46-to-50-year age bracket (officers indicated their age by selecting an age bin for anonymity purposes). Most officers identified as men (72.5%), heterosexual (95.4%), non-racialized (89.1%), married/cohabiting (87.2%), and holding a college or university degree (72.8%). In terms of employment status, most officers indicated working full-time (97.5%) at the rank of Constable (41.1%), in an urban environment (44.1%), and with a mean of 18.7 years of service (SD = 9.1) (see Table 1 in Chapter 2 for full sample demographics).

Importantly, the current sample is reflective of the Canadian policing landscape. Our sample reflected Canadian policing population rates for gender, with women making up 27.2% of our sample compared with 23% in Canada, and racialized group status, with 6.5% of individuals identifying as belonging to a racialized group in our sample compared to 8% of all Canadian officers and 2% of the OPP (Statistics Canada, 2024a).

Materials

Socio-demographic variables

Information related to gender, age, ethnicity, relationship status, parental status, education, rank, years of service, departmental jurisdiction (e.g., municipal, provincial, federal) and province was obtained from participants.

Workplace Social Factors

Operational and Organizational Police Stress Questionnaires (McCreary & Thompson, 2006)

The Police Stress Questionnaires – Operational (PSQ-Op) and Organizational (PSQ-Org) are self-report measures assessing the degree to which an officer is bothered by job-related stressors in the previous six months. Specifically, the PSQ-Op is a 20-item scale assessing stressors associated with completing police-related duties (e.g., "risk of being injured on the job"). The PSQ-Org assesses stressors related to the organization and culture within which one works (e.g., "inconsistent leadership style"). Items are measured on a 7-point Likert scale ranging from "No stress at all (1)" to "A lot of stress (7)." A total score is derived for each scale from a mean of item scores, with greater scores indicating elevated stress. Coefficient omega (ω) reliability analyses for the current sample suggested strong internal consistency (PSQ-Org ω = 0.91; PSQ-Op ω = .93).

Job Satisfaction Scale (Judge et al., 1998)

The Job Satisfaction Scale is a 5-item self-report scale derived from the Brayfield-Rothe Job Satisfaction Index (Brayfield & Rothe, 1951). Items (e.g., "I find real enjoyment in my

work") are responded to on a 7-point Likert scale ranging from "Strongly disagree (1)" to "Strongly agree (7)." The scale is scored as a mean of item scores, with higher scores relating to being more satisfied with one's job. The coefficient ω reliability estimate for this scale was 0.85 with the current sample.

Public Trustworthiness Scale for Police - Benevolence (PTSP-Ben; Mourtgos et al., 2020)

The PTSP-Ben is a 5-item self-report scale assessing officer perceptions of the public as well intentioned and concerned about the welfare of police officers. Items (e.g., "The public goes out of their way to help me") are scored on a 5-point Likert-type scale ranging from "Strongly disagree (1)" to "Strongly agree (5)." Greater scores equate to heightened perceptions of the public's benevolence towards officers. The coefficient ω reliability estimate for this scale was 0.87.

Interpersonal Social Factors

The Adverse Childhood Experiences Questionnaire (ACE-Q; Felitti et al., 1998; Merrick et al., 2017)

The ACE-Q is a self-report, retrospective measure that assesses commonly experienced ACEs (Felitti et al., 1998). Here, we administered an expanded 10-item version of this scale similar to Merrick et al's. (2017), with the exception that spanking was not included. Items assess childhood abuse and neglect (emotional, physical, and sexual abuse, and emotional and physical neglect) and household dysfunction (separation/divorce of parents, domestic violence, and substance abusing, mentally ill, or incarcerated family members). A total score is computed as a

sum of the dichotomous “No (0)” or “Yes (1)” items, with greater scores reflecting greater number of ACEs. The coefficient ω reliability estimate for this scale was adequate at 0.71.

The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988)

The MSPSS is a 12-item self-report measure of perceived availability of social support from friends, family, and significant others. Participants respond to items (e.g., “I can talk about my problems with friends”) on a 7-point Likert scale ranging from “Strongly disagree (1)” to “Strongly agree (7)” with higher summed total scores reflective of increased perceived social support. It is evidenced to have solid construct validity according to initial validation work. The coefficient ω reliability estimate for this scale was strong at 0.93.

Personality-Self Factors

The Self-Compassion Scale - Short Form (SCS; Raes et al., 2011)

The SCS is a 12-item measure of trait self-compassion (e.g., “When I fail at something important to me, I become consumed by feelings of inadequacy”) utilizing a 5-point Likert-type scale ranging from “Almost never (1)” to “Almost always (5).” It is suggested that the total SCS score be used, which is computed by summing item ratings, with higher scores indicative of greater self-compassion (Neff, 2003; Raes et al., 2011). Initial validation work reported the scale was very highly correlated with the original long-form SCS across samples tested ($r \geq 0.97$), while retaining the factor structure. In the present study, the coefficient ω reliability estimate for this scale was 0.87.

The Short Grit Scale (SGS; Duckworth & Quinn, 2009)

The SGS is an eight-item measure of perseverance and passion for long-term goals. This measure utilizes a 5-point Likert-type scale ranging from "Not like me at all (1)" to "Very much like me (5)." A total score and two subscale scores are computed using item mean scores: Perseverance of Effort (e.g., "Setbacks don't discourage me") and Consistency of Interest (e.g., reverse scored item: "I often set a goal but later choose to pursue a different one"). Higher scores suggest increased grit. Coefficient ω reliability estimate for this scale was adequate at 0.76.

The General Mattering Scale (GMS; Marcus & Rosenberg, 1987)

The GMS is a 5-item self-report measure of one's perception of how much they matter to others. Participants respond to items (e.g., "How important do you feel you are to other people?") on a 4-point Likert-type scale ranging from "Not at all (1)" to "A lot (4)" with higher summed total scores reflective of increased mattering. Reliability and validity are strong (see Flett, 2018). Internal consistency was strong in the present research (ω = 0.85).

The Anti-Mattering Scale (AMS; Flett et al., 2022)

The AMS is a 5-item self-report measure of ones perceived insignificance and unimportance to others, designed to parallel the GMS. Participants respond to items (e.g., "To what extent have you been made to feel like you are invisible?") on a 4-point Likert-type scale ranging from "Not at all (1)" to "A lot (4)" with higher summed total scores reflective of increased anti-mattering. In the initial validation work, strong criterion validity was demonstrated. The coefficient ω reliability estimate for this scale was strong at 0.90.

The Work Mattering Scale (WMS; Jung & Heppner, 2017)

The WMS is a 10-item self-report measure that taps the worker's sense of mattering to their colleagues and their sense of whether their work is valued by society. Each subscale contains 5 items; for example, “I think that society values the work I do” (Societal Mattering) and “I feel like I matter to my coworkers” (Interpersonal Mattering). Items are scored on a 6-point Likert scale ranging from “Disagree very much (1)” to “Agree very much (6)” with higher summed scores reflecting greater perceptions of mattering. In the initial validation work, strong correlations were evidenced between the WMS and a measure of job satisfaction. In the present study, solid internal consistency was reported across the Societal Mattering ($\omega = 0.80$) and Interpersonal Mattering subscales ($\omega = 0.88$) and for the total score ($\omega = 0.85$).

Socially Prescribed Perfectionism - Short Form (SPP; Hewitt & Flett, 1991a)

The SPP subscale of the Multidimensional Perfectionism Scale is a 15-item self-report measure assessing perceptions one holds regarding others’ expectations of achieving perfection. Here, we used a valid and reliable 5-item short form of this subscale. Participants respond to items (e.g., “Those around me readily accept that I can make mistakes too.”) on a 7-point Likert scale ranging from “Disagree (1)” to “Agree (7)” with higher summed total scores reflective of increased socially prescribed perfectionism. Initial validation work suggested good construct validity. The coefficient ω reliability estimate for this scale was 0.83 in the present study.

The Posttraumatic Cognitions Inventory - 9 Item (PTCI; Wells et al., 2019)

A brief version of the original PTCI (Foa et al., 1999) was used to identify negative posttraumatic cognitions which are believed to lead to the development and maintenance of

PTSD symptoms. It is a 9-item self-report questionnaire measured on a 7-point Likert scale ranging from "Totally disagree (1)" to "Totally agree (7)." Fit statistics for the 3-factor structure were strong, including negative cognitions about the self (e.g., "I have no future"), the world (e.g., "People can't be trusted"), and self-blame (e.g., "The event happened because of the way I acted"). Total and subscale scores are derived from a mean of item scores, with higher scores reflecting greater struggles with negative posttraumatic cognitions. In the present study, internal consistencies were solid for the total scale (ω = 0.83), and the Self (ω = 0.84), World (ω = 0.82), and Self-Blame (ω = 0.76) subscales.

Trauma Exposure, Traumatic Stress, and Trauma-Related Outcomes

The Life Events Checklist for the Diagnostic and Statistical Manual for Mental Health Disorders, Fifth Edition (LEC-5; Weathers et al., 2013a)

The LEC-5 is a 17-item self-report measure assessing exposure to traumatic events to establish criterion A of the DSM-5 PTSD diagnostic framework (APA, 2013). For each of the 16 events (e.g., "Severe human suffering") and one labelled "any other very stressful event or experience" participants are to indicate whether it happened to them personally, they witnessed it happen to someone else, they learned about it happening to a close family member or friend or colleague, they were exposed to it as part of their job, they are not sure if it fits, or it does not apply to them. A total score (0 to 17) was derived for each officer based on any endorsement of each of the items. In addition, for each of the exposure categories (i.e., personal, witnessed, learned, job exposure) a sum score was derived for each officer. Finally, a percentage of the sample endorsing each item was calculated. The coefficient ω reliability estimate for the total score was 0.72.

The Posttraumatic Stress Disorder Checklist for the Diagnostic and Statistical Manual for Mental Health Disorders, Fifth Edition (PCL-5; Weathers et al., 2013b)

The PCL-5 is a 20-item measure assessing the severity of PTSD symptoms following the DSM-5 criteria (APA, 2013). This includes criteria for the following symptom clusters: intrusive symptoms (5 items; e.g., "repeated, disturbing, and unwanted memories of the stressful experience"), avoidance (2 items; e.g., "avoiding memories, thoughts, or feelings related to the stressful experience"), negative alterations in cognition and mood (7 items; e.g., "blaming yourself or someone else for the stressful experience or what happened after it"), and arousal and reactivity (6 items; e.g., "feeling jumpy or easily startled"). Based on symptom experiences in the last month (e.g., repeated, disturbing, and unwanted memories of the stressful experience"), items are scored on a five-point Likert-type scale ranging from "Not at all (0)" to "Extremely (4)," with total scores ranging from 0 to 80; greater scores indicate heightened symptom severity. The scale has demonstrated strong convergent validity with other measures of trauma (Blevins et al., 2015; Sveen et al., 2016). In screening for probable PTSD, the PCL-5 developers recommend using a cut-off score as more reliable than applying DSM-5 diagnostic criteria to the scale. A cut-score of 33 on this scale demonstrated strong sensitivity (0.93) and specificity (0.72) for identifying PTSD among treatment-seeking military service members (Wortmann et al., 2016), with others suggesting cut-scores of 31 to 33 equally sensitive (0.88) and specific (0.69) among military veterans (Bovin et al., 2016). In this dissertation, a cut-off score of 33 was used. The coefficient ω reliability estimate for the total score was 0.95 and for the subscales ranged from 0.85 to 0.92.

The Moral Injury Assessment for Public Safety Personnel (MIA-PSP; Roth et al., 2022a)

Described in Chapter 2, the MIA-PSP is a 17-item self-report measure assessing morally injurious experiences among public safety personnel. It is comprised of three factors, named *Emotional Sequelae* (7 items; e.g., "I am bothered by feelings of shame"), *Perpetrations* (5 items; e.g., "I am bothered that I chose to protect myself rather than protecting another person"), and *Betrayals* (5 items; e.g., "I am bothered that my employer did not provide sufficient training, which resulted in negative consequences"). Items are rated on a 6-point Likert-scale ranging from "Strongly disagree (1)" to "Strongly agree (6)" and summed to obtain total and subscale scores, with greater scores indicating greater severity of MI. The scale demonstrated good construct and convergent validity in relation to other trauma-related measures. As noted in Chapter 2, the Emotional Sequelae ($\omega = 0.92$), Perpetrations ($\omega = 0.82$), and Betrayals ($\omega = 0.89$) subscales demonstrated strong internal consistency in the present study.

The Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001)

The PHQ-9 is a 9-item self-report scale assessing depressive symptoms in the previous two weeks (e.g., "little interest or pleasure in doing things") following DSM-5 criteria (APA, 2013). Items are scored on a relative frequency scale ranging from "Not at all (0)" to "Nearly every day (3)." The scale is scored as a sum of item scores with total scores ranging from 0 to 27; higher scores indicate greater symptom severity. Total scores are categorized as minimal (0 to 4), mild (5 to 9), moderate (10 to 14), moderately severe (15 to 19), and severe (20 to 27). The scale has demonstrated good criterion and construct validity. The coefficient ω reliability estimate for this scale was 0.90 with the current data.

The Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006)

The GAD-7 is a 7-item self-report scale assessing generalized anxiety symptoms in the previous two weeks (e.g., "not being able to stop or control worrying") following DSM-5 criteria (APA, 2013). Items are scored on a relative frequency scale ranging from "Not at all (0)" to "Nearly every day (3)." The scale is scored as a sum of item scores with total scores ranging from 0 to 21; higher scores indicating greater symptom severity. Total scores are categorized as minimal (0 to 4), mild (5 to 9), moderate (10 to 14), and severe (15 to 21). The scale has demonstrated good criterion and construct validity. The coefficient ω reliability estimate for this scale was 0.92.

The Burnout Measure - Short Version (BMS; Malach-Pines, 2005)

The burnout measure is a 10-item self-report scale derived from the 21-item Burnout Measure (Pines & Aronson, 1988). Individuals rate their level of physical, emotional, and mental fatigue on a 7-point Likert scale ranging from "Never (1)" to "Always (7)" responding to feelings associated with work such as "Tired" or "Worthless/feel like a failure." The scale is scored as a mean of item scores, with greater scores identifying heightened levels of burnout. The coefficient ω reliability estimate for this scale was 0.92 with the current sample.

The Satisfaction with Life Scale (SWLS; Diener et al., 1985)

The SWLS is a 5-item self-report scale assessing the degree to which individuals are content with their lives. Items (e.g., "In most ways my life is close to ideal.") are responded to on a 7-point Likert scale ranging from "Strongly disagree (1)" to "Strongly agree (7)". A total score is derived from a sum of item scores, with scores ranging from 7 to 35, with higher scores

reflecting greater life satisfaction. Internal consistency findings in the current study are strong (ω = 0.93).

The Posttraumatic Growth Inventory - Short Form (PTGI; Cann et al., 2010)

The PTGI is a 10-item self-report questionnaire derived from the original 21-item scale (Tedeschi & Calhoun, 1996). It assesses the degree to which an individual has experienced positive outcomes in the aftermath of traumatic events (e.g., "Appreciating every day"). Participants respond on a 6-point Likert-type scale ranging from "I did not experience this change as a result of this incident (0)" to "I experienced this change to a great degree as a result of this incident (5)." An equivalent five-factor structure of this scale is found in the short form: new possibilities, ability to relate to others, personal strength, appreciation for life, and spiritual change. Total and subscale scores are a sum of item scores, with a greater score indicating heightened posttraumatic growth. Total scores can range from 0 to 50. The coefficient ω reliability estimate for this scale was 0.90.

The Conscientious Responders Scale (Marjanovic et al., 2014)

The Conscientious Responders Scale is a 5-item scale with items scored on a 7-point Likert scale. Items are distributed throughout the survey battery and instruct participants to select a specific response. Original validation work suggested that only 2.33% of random responders would be able to achieve a score of 3 or higher by chance alone, and this was used as a cut-off for data exclusion.

Self-Exclusion Question

Following completion of the survey battery, participants were prompted to respond to a dichotomous yes or no question about whether they felt they paid sufficient attention to the survey items for their data to be included (e.g., Mongrain & Shoikedbrod, 2021).

Statistical Analyses

SPSS version 29 (IBM Corp.) was used to conduct the following analyses. Individual mean replacement was used when the data for a single item was missing within a single scale for ten participants. Descriptive statistics were used to characterize the variables of interest. Coefficient omega (ω) was used to examine the reliability of the scales used in the study (Flora, 2020).

Following internal reliability analyses, Pearson's correlation (*r*) was used to identify any relation between study variables, with effect sizes defined as 0.1 (small), 0.3 (medium), and 0.5 (large) based on Cohen (1992). Prior to running the correlation analyses, statistical assumptions were verified. Data was relatively bivariate normal, assessed via visual inspection of histograms and Q-Q plots. Assumption of linearity was met based on visual inspection of scatter plots. Extreme outliers were defined as beyond 3.29 standard deviations from the mean and separated from the distribution (Tabachnick & Fidell, 2007). Sensitivity analyses revealed that outliers (ACE-Q:1, PTCI-9-Negative Self: 1, MIA-PSP-Perpetrations: 4) did not significantly impact results, and thus were included in the analyses as clinically meaningful.

A cut-score of 33 on the PCL-5 was used to assess probable PTSD diagnosis (Bovin et al., 2016; Wortmann et al., 2016). Independent sample or Welch *t*-tests were utilized to compare

across variables of interest depending on whether the homogeneity of variance assumption was satisfied (based on Levene's test). Data were relatively normal based on visual inspection of histograms and QQ-plots. Where slight skewness was identified, the distributions were similar between groups. Sensitivity analyses revealed that outliers identified solely within the probable PTSD group (ACE-Q:1, PTCI-9-Negative Self: 1, MIA-PSP-Perpetrations: 4) did not significantly impact results, and thus were included in the analyses as clinically meaningful. Due to unequal sample sizes, effect sizes were calculated using Hedge's *g*, with cut-offs of 0.2 (small), 0.5 (medium), and 0.8 (large) (Lakens, 2013). For all tests, alpha was set at .05.

For the hierarchical regression analyses, all observations were independent based on study design (Durbin-Watson statistics = 1.86 to 2.06). Residuals were relatively normal, assessed via visual inspection of histograms and P-P plots. Where the residuals were heavily skewed, a log base 10 transformation was applied to the dependent variable (MIA-PSP-Perpetrations), leading to a relatively normal distribution. Assumption of linearity and homoscedasticity were met based on visual inspection of residual plots. For multicollinearity, correlations between independent variables were less than 0.8 and the VIF statistics were below 2.5 (Field, 2013). Burnout was unable to be included as a predictor in any of the models because it had a VIF greater than 3.0 and was thus included solely as an outcome. Given the findings of poor fit for the MIA-PSP one-factor CFA model, but strong fit for the three-factor model, the individual subscales (i.e., emotional sequelae, perpetrations, betrayals) were included as dependent variables in separate regression models. Multivariate outliers were removed when sensitivity analyses determined that they significantly impacted results with PCL-5 (n = 1), MIA-PSP-emotional sequelae (n = 3), MIA-PSP-perpetrations (n = 2), burnout (n = 1), and PTCI-9 (n

= 2) as dependent variables, otherwise they were retained in the analyses as clinically meaningful.

For each dependent variable (PCL-5; MIA-PSP-emotional sequelae, perpetrations, betrayals; PHQ-9; GAD-7; burnout; SWLS; PTGI) predictors were input in the following steps: 1) control variables (years of service, PSQ-Op & Org), 2) risk and resiliency variables that have been evidenced to predict mental health outcomes among police officers (ACE-Q, MSPSS, Job Satisfaction, SCS), 3) risk and resiliency variables that have not been thoroughly studied among police officers (SGS, GMS, AMS, WMS, PTSP-Ben, SPP), and 4) PTCI-9 given its uniqueness as a variable, and relation to traumatic stress. When PTGI was modelled as the dependent variable, PCL-5 was also included as a control variable in step 1. Post-hoc, a model was also analyzed with PTCI-9 as the dependent variable, with independent variables input in the same steps as other models. Effect sizes were defined as 0.02 (small), 0.13 (medium), and 0.26 (large) based on Cohen (2013). For all tests, α was set at 0.05.

With respect to sample size, we utilized G*Power to conduct the power analysis prior to study recruitment (Faul et al., 2007). For a hierarchical regression approach with a medium effect size (0.15) and power of 0.8, where 3 variables (years of service, police stress-operational and organizational) were included in step 1 and the remaining 11 variables were included in the following steps, a minimum sample size of 123 participants was determined to be needed (Faul et al., 2007). Our sample size exceeded this minimum required for adequate power.

Results

Descriptive Statistics

Trauma Exposure

Regarding trauma exposure, every officer in the study endorsed exposure to at least one potentially traumatic event on the LEC-5 (see Table 7 for LEC-5 findings). As this is not an epidemiological study, we do not have data to reflect the frequency of exposure to each type of potentially traumatic event, so we cannot generalize these findings to calculate broader incident rates. However, the mean of 12.74 types of potentially traumatic events is quite elevated considering the total possible score is 17. Almost three-quarters or more of the sample endorsed exposure to natural disasters, sexual assault, unwanted/uncomfortable sexual experiences, life-threatening illness or injury, and severe human suffering. Over 90% of officers endorsed exposure to fire/explosions, transportation accidents, serious accidents, physical assault, assault with a weapon, sudden violent death, and sudden accidental death. Further, the vast majority of trauma exposure occurred in the line of duty.

Table 7

Life Events Checklist for the DSM-5

	M	*SD*	Min	Max
LEC-5 Total	12.74	2.66	3	17
Job Exposure	10.29	4.25	0	17
Personal Experience	3.30	2.65	0	16
Witnessed	3.76	3.96	0	17
Learned	3.76	4.27	0	17

Traumatic Event	*n*	%
1. Natural disaster (e.g., flood, hurricane, tornado, earthquake)	270	73.6%
2. Fire or explosion	342	93.2%
3. Transportation accident (e.g., car accident, boat accident, train wreck, plane crash)	361	98.4%
4. Serious accident at work, home, or during recreational activity	334	91.0%
5. Exposure to toxic substance (e.g., dangerous chemicals, radiation)	213	58.0%
6. Physical assault	361	98.4%
7. Assault with a weapon (e.g., being shot, stabbed, threatened with a knife, gun, bomb)	340	92.6%
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)	299	81.5%
9. Other unwanted or uncomfortable sexual experience	285	77.7%
10. Combat or exposure to a war-zone (in the military or as a civilian)	112	30.5%
11. Captivity (e.g., being kidnapped, abducted, held hostage, prisoner of war)	157	42.8%
12. Life-threatening illness or injury	299	81.5%
13. Severe human suffering	302	82.3%
14. Sudden violent death (e.g., homicide, suicide)	358	97.5%
15. Sudden accidental death	357	97.3%
16. Serious injury, harm, or death you caused to someone else	169	46.0%
17. Any other very stressful event or experience	116	31.6%

Mental Health Outcomes and Psychosocial Variables

In terms of mental health outcomes for the entire sample ($N = 367$), 27.0% ($n = 99$) met probable criteria for PTSD (PCL-5 $\geq$ 33). Other clinical elevations included 21.0% ($n = 77$) of officers fell in clinically elevated range for generalized anxiety and 22.6% (n = 83) fell in the clinically elevated range for depression. Specifically, 51.8% fell in the minimal anxiety range ($n = 190$), 27.2% in the mild range ($n = 100$), 14.2% in the moderate range ($n = 52$), and 6.8% in the severe range ($n = 25$). For depressive symptoms, 49.9% were in the minimal range ($n = 183$), 27.5% in the mild range ($n = 101$), 13.4% in the moderate range ($n = 49$), 6.5% in the moderately severe range ($n = 24$), with 2.7% in the severe range ($n = 10$). In terms of the sample as a whole, based on sample means, the average scores for these mental health outcome indices fell in the mild range for anxiety and depression, and below the cut-off for probable PTSD. See Table 8 for the means, standard deviations, and range of all study variables.

Table 8

Study Variables Descriptive Statistics

	M	*SD*	Min	Max
Years of Service	18.69	9.09	1.0	45.0
PSQ-Op	3.39	1.19	1.0	6.9
PSQ-Org	3.74	1.11	1.0	6.8
ACE-Q	1.49	1.82	0.0	10.0
MSPSS	4.05	0.81	1.3	5.0
Job Satisfaction	5.17	1.46	1.8	8.2
SCS	3.17	0.72	1.2	5.0
SGS	3.63	0.59	2.0	5.0
GMS	15.26	2.96	7.0	20.0
AMS	9.79	3.66	5.0	20.0
WMS	43.07	7.87	18.0	60.0
PTSP-Ben	2.49	0.80	1.0	5.0
SPP	16.84	5.96	6.0	33.0
PTCI	2.71	1.00	1.0	6.7
Negative Self	1.79	1.13	1.0	7.0
Negative World	4.03	1.41	1.0	7.0
Self-Blame	2.32	1.26	1.0	7.0
PCL-5	23.10	17.66	0.0	75.0
Intrusions	5.63	5.15	0.0	20.0
Avoidance	2.72	2.50	0.0	8.0
Cognitions	6.84	6.38	0.0	28.0
Arousal	7.91	5.73	0.0	24.0
MIA-PSP				
Emotional Sequelae	16.07	7.94	7.0	42.0
Perpetrations	7.65	4.16	5.0	29.0
Betrayals	16.49	7.09	5.0	30.0
PHQ-9	5.91	5.57	0.0	25.0
GAD-7	5.36	5.13	0.0	21.0
Burnout	3.26	1.13	1.0	6.9
SWLS	24.15	6.59	5.0	35.0
PTGI	19.00	11.05	0.0	47.0

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org,

Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item; PCL-5, Posttraumatic Stress Disorder Checklist for the DSM-5; MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PHQ-9, Patient Health Questionnaire-9; GAD-7, Generalized Anxiety Disorder-7; SWLS, Satisfaction with Life Scale; PTGI, Posttraumatic Growth Inventory-Short Form

Correlations between Study Variables

The following is a description of correlations which were in the medium or large effect size range between psychosocial variables and mental health outcomes, thus highlighting their potential clinical significance (see Tables 9 and 10 for full correlations). Regarding associations between psychosocial variables, operational and organizational stress were strongly positively associated with each other and moderately associated with lessened self-compassion and perceived benevolence, along with heightened anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions. Operational stress was also related to lower levels of grit, with organizational stress related to lower job satisfaction and work mattering.

Social support and self-compassion were moderately positively connected, and related to heightened mattering, work mattering, perceived benevolence, as well as lessened anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions. Self-compassion was further related to greater grit. Next, job satisfaction was moderately associated with greater work mattering and perceived benevolence.

General and work mattering were strongly positively associated with each other as well as perceived benevolence, and negatively related to anti-mattering and posttraumatic cognitions. Anti-mattering was associated with lower perceived benevolence and greater posttraumatic cognitions and socially prescribed perfectionism. Greater grit and perceived benevolence, along with lower socially prescribed perfectionism were related to lower posttraumatic cognitions.

In terms of associations with trauma-related outcomes, greater operational and organizational stress, anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions, and lessened self-compassion were all significantly associated with greater total

PTSD, MI emotional sequelae, MI betrayals, depression, anxiety and burnout scores. Greater anti-mattering, posttraumatic cognitions, and lessened self-compassion were also associated with worsened life satisfaction.

Lower levels of work mattering were also associated with heightened PTSD, MI emotional sequelae, MI betrayals, depression, and burnout, along with worsened life satisfaction. Lessened social support and mattering were also related to greater PTSD, depression, burnout, and lower life satisfaction, with lower mattering also associated with elevated MI emotional sequelae. Lower perceived public benevolence was connected to heightened PTSD, MI betrayals, depression, and burnout. Also associated were lessened grit with greater MI emotional sequelae, depression, anxiety, and burnout levels as well as lower job satisfaction with greater MI betrayals, depression, burnout levels, and lower life satisfaction. While significantly associated with the psychosocial risk and resiliency variables, associations with MI perpetrations and posttraumatic growth were not in the medium to large effect size range.

Regarding associations between trauma-related outcomes, with moderate to large effects, we see that PTSD, MI emotional sequelae, depression, anxiety, burnout, and life satisfaction were all significantly related to each other. As any of these variables increase, they are associated with elevations in the others aside from life satisfaction, which is lessened. Greater MI emotional sequelae was also associated with greater MI perpetrations and MI betrayals. MI betrayals was associated with heightened depression and burnout.

Table 9

Correlations between Psychosocial Variables and Mental Health Outcomes

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Years of Service	--													
2.PSQ-Op	-.169**													
3.PSQ-Org	-.195**	.671**												
4.ACE-Q	-.006	.114*	.132*											
5.MSPSS	-.108*	-.233**	-.106*	-.104*										
6.Job Satisfaction	.152**	-.297**	-.354**	-.082	.198**									
7.SCS	.064	-.399**	-.335**	-.178**	.341**	.272**								
8.SGS	.088	-.320**	-.275**	-.079	.088	.274**	.365**							
9.GMS	.036	-.266**	-.247**	-.101	.415**	.252**	.439**	.193**						
10.AMS	-.058	.367**	.368**	.211**	-.337**	-.260**	-.470**	-.248**	-.555**					
11.WMS	.082	-.270**	-.317**	-.048	.341**	.518**	.353**	.151**	.566**	-.457**				
12.PTSP-Ben	.163**	-.315**	-.386**	-.044	.301**	.343**	.304**	.117*	.340**	-.304**	.492**			
13.SPP	-.091	.497**	.495**	.118*	-.302**	-.289**	-.436**	-.218**	-.248**	.395**	-.261**	-.296**		
14.PTCI	-.062	.397**	.400**	.185**	-.340**	-.293**	-.470**	-.317**	-.431**	.520**	-.435**	-.350**	.357**	
PCL-5	-.011	.505**	.406**	.262**	-.320**	-.251**	-.529**	-.286**	-.338**	.483**	-.314**	-.326**	.430**	.584**
Intrusions	.028	.399**	.323**	.249**	-.189**	-.181**	-.401**	-.193**	-.223**	.362**	-.223**	-.251**	.346**	.437**
Avoidance	.018	.415**	.319**	.193**	-.241**	-.195**	-.392**	-.253**	-.248**	.333**	-.267**	-.255**	.313**	.409**
Cognitions	-.015	.508**	.403**	.219**	-.365**	-.272**	-.532**	-.288**	-.389**	.509**	-.340**	-.302**	.435**	.622**
Arousal	-.050	.451**	.375**	.255**	-.307**	-.222**	-.505**	-.278**	-.300**	.450**	-.273**	-.332**	.394**	.535**
MIA-PSP														
Emotional Sequelae	-.086	.448**	.313**	.246**	-.285**	-.287**	-.567**	-.345**	-.376**	.493**	-.315**	-.239**	.404**	.558**
Perpetrations	.057	.191**	.158**	.151**	-.071	-.126*	-.132*	-.091	-.156**	.154**	-.141**	-.045	.186**	.200**
Betrayals	-.135**	.450**	.565**	.179**	-.151**	-.395**	-.307**	-.215**	-.235**	.410**	-.354**	-.370**	.366**	.363**
PHQ-9	-.021	.442**	.396**	.225**	-.377**	-.363**	-.513**	-.355**	-.396**	.560**	-.348**	-.297**	.437**	.557**
GAD-7	-.095	.401**	.315**	.155**	-.208**	-.271**	-.566**	-.339**	-.299**	.435**	-.270**	-.211**	.377**	.460**
Burnout	-.166**	.530**	.531**	.188**	-.324**	-.568**	-.547**	-.372**	-.403**	.609**	-.503**	-.402**	.492**	.562**
SWLS	-.003	-.283**	-.257**	-.138**	.493**	.335**	.489**	.195**	.389**	-.469**	.409**	.248**	-.297**	-.469**
PTGI	-.039	0.10	.106*	.013	.220**	.049	.185**	.058	.152**	-.028	.121*	.078	.026	.004

Notes. *$p < 0.05$; **$p < 0.01$

PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item; PCL-5, Posttraumatic Stress Disorder Checklist for the DSM-5; MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PHQ-9, Patient Health Questionnaire-9; GAD-7, Generalized Anxiety Disorder-7; SWLS, Satisfaction with Life Scale; PTGI, Posttraumatic Growth Inventory-Short Form

Table 10

Correlations between Mental Health Outcomes

	1	2	3	4	5	6	7	8	9	10	11	12	13
1.PCL-5	--												
2.Intrusions	.872**												
3.Avoidance	.821**	.725**											
4.Cognitions	.925**	.704**	.696**										
5.Arousal	.910**	.691**	.668**	.803**									
MIA-PSP													
6.Emotional Sequelae	.608**	.470**	.442**	.634**	.553**								
7.Perpetrations	.250**	.226**	.235**	.239**	.199**	.353**							
8.Betrayals	.400**	.316**	.330**	.375**	.389**	.377**	.281**						
9.PHQ-9	.700**	.525**	.510**	.703**	.682**	.633**	.178**	.373**					
10.GAD-7	.665**	.539**	.510**	.627**	.646**	.617**	.163**	.290**	.723**				
11.Burnout	.581**	.415**	.422**	.618**	.546**	.588**	.188**	.479**	.691**	.562**			
12.SWLS	-.439**	-.294**	-.369**	-.466**	-.411**	-.436**	-.114*	-.282**	-.556**	-.393**	-.525**		
13.PTGI	.084	.109*	.064	.059	.065	-.055	.121*	.170**	-.092	-.042	-.067	.201**	--

Notes. *$p < 0.05$; **$p < 0.01$
PCL-5, Posttraumatic Stress Disorder Checklist for the DSM-5; MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PHQ-9, Patient Health Questionnaire-9; GAD-7, Generalized Anxiety Disorder-7; SWLS, Satisfaction with Life Scale; PTGI, Posttraumatic Growth Inventory-Short Form

Hypotheses 1 & 2: A Comparison of Probable PTSD vs. Non-Probable PTSD

The probable PTSD group were 44.4% constables (n = 44), 72.7% men (*n* = 72), 21.2% (*n* = 21) in each of the 41 to 45 and 46 to 50 age categories, 89.9% non-racialized (*n* = 89), and 93.9% (*n* = 93) heterosexual. The probable PTSD and non-probable PTSD groups did not statistically differ based on rank [χ^2 (9,367) = 6.37, *p* = 0.703], gender identity [χ^2 (2,367) = 0.37, *p* = 0.831], age [χ^2 (7,367) = 4.98, *p* = 0.663], race [χ^2 (2,367) = 0.62, *p* = 0.734], nor sexual orientation [χ^2 (2,367) = 0.90, *p* = 0.638].

Looking to any mean differences on important variables between the probable and non-probable PTSD groups, notably there was no statistically significant difference in years of service (see Table 11 for *t*-test results). In terms of trauma exposure, those with probable PTSD endorsed a greater number of types of potentially traumatic events, with a small effect, and greater exposure in their personal life and as witnesses to potentially traumatic events, with medium and small effects, respectively. They endorsed heightened operational and organizational stress, with medium and large effects, respectively.

In terms of related mental health outcomes, within the probable PTSD group, 49.5% (*n* = 49) were in the clinically elevated range for generalized anxiety and 53.5% (*n* = 53) demonstrated clinically elevated depression. More specifically, 14.1% fell in the minimal anxiety range (*n* = 14), 36.4% in the mild range (*n* = 36), 33.3% in the moderate range (*n* = 33), and 16.2% in the severe range (*n* = 16). For depressive symptoms, 10.1% were in the minimal range (*n* = 10), 36.4% in the mild range (*n* = 36), 28.3% in the moderate range (*n* = 28), 16.2% in the moderately severe range (*n* = 16), with 9.1% in the severe range (*n* = 9).

Within the non-probable PTSD group, 10.4% (*n* = 28) were in the clinically elevated range for generalized anxiety and 11.2% (*n* = 30) demonstrated clinically elevated depression.

Specifically, 65.7% fell in the minimal anxiety range (n = 176), 23.9% in the mild range (n = 64), 7.1% in the moderate range (n = 19), and 3.4% in the severe range (n = 9). For depressive symptoms, 64.6% were in the minimal range (n = 173), 24.3% in the mild range (n = 65), 7.8% in the moderate range (n = 21), 3.0% in the moderately severe range (n = 8), with 0.4% in the severe range (n = 1).

Findings suggest that the probable PTSD group is suffering with greater MI emotional sequelae (large effect), MI perpetrations (small effect), and MI betrayals (moderate effect). They are also exhibiting significantly greater symptoms of depression, anxiety, and burnout, with poorer life satisfaction in comparison to the non-probable PTSD group, all with large effects.

Looking to the psychosocial risk and resiliency variables, the officers with probable PTSD indicated significantly greater adverse childhood experiences, poorer job satisfaction, and work mattering, with small effects. Medium effects, often deemed clinically meaningful, were observed with lessened social support, grit, mattering, and perceived public benevolence. Large effects were noted with the probable PTSD group endorsing lessened self-compassion and heightened anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions (and each of the negative self, world, and self-blame subscales) in comparison to the non-probable PTSD group.

Table 11

Comparison of Officers with Probable PTSD vs. Non-Probable PTSD

Measure	Probable PTSD		Non-Probable PTSD		*t*	*p*	Effect (*g*)
	M	SD	M	SD			
Years of Service	19.39	8.35	18.43	9.36	0.89	0.373	0.11
LEC-5	13.24	2.72	12.55	2.62	**2.22**	0.027	0.26
Job Exposure	9.88	4.99	10.45	3.95	-1.02	0.309	0.14
Personal Experience	4.40	2.83	2.89	2.46	**5.03**	<0.001	0.59
Witnessed	4.49	4.42	3.49	3.75	**2.01**	0.047	0.25
Learned	4.20	4.68	3.60	4.10	1.21	0.228	0.14
PSQ-Op	4.31	1.14	3.52	1.02	**6.34**	<0.001	0.77
PSQ-Org	4.10	1.13	3.13	1.11	**7.39**	<0.001	0.88
ACE-Q	2.07	2.02	1.28	1.70	**3.48**	<0.001	0.44
MSPSS	3.68	0.88	4.19	0.74	**-5.60**	<0.001	0.66
Job Satisfaction	4.76	1.46	5.32	1.43	**-3.33**	<0.001	0.39
SCS	2.70	0.67	3.34	0.66	**-8.28**	<0.001	0.97
SGS	3.41	0.63	3.71	0.55	**-4.38**	<0.001	0.51
GMS	14.11	2.82	15.69	2.90	**-4.66**	<0.001	0.55
AMS	12.08	3.52	8.94	3.34	**7.88**	<0.001	0.92
WMS	40.32	8.15	44.09	7.53	**-4.12**	<0.001	0.49
PTSP-Ben	2.18	0.74	2.61	0.79	**-4.71**	<0.001	0.55
SPP	20.27	5.96	15.57	5.44	**7.16**	<0.001	0.84
PTCI	3.48	1.08	2.43	0.80	**8.81**	<0.001	1.19
Negative Self	2.59	1.40	1.49	0.84	**7.30**	<0.001	1.07
Negative World	4.81	1.22	3.75	1.36	**7.21**	<0.001	0.80
Self-Blame	3.04	1.54	2.05	1.02	**5.92**	<0.001	0.83
MIA-PSP							
Emotional Sequelae	22.35	7.90	13.75	6.59	**9.67**	<0.001	1.23
Perpetrations	9.03	4.42	7.14	3.95	**3.75**	<0.001	0.46
Betrayals	20.04	7.07	15.43	6.75	**5.46**	<0.001	0.67
PHQ-9	10.99	5.53	4.04	4.26	**11.33**	<0.001	1.50
GAD-7	9.61	4.84	3.70	4.28	**10.53**	<0.001	1.31
Burnout	4.12	1.10	2.94	0.97	**9.98**	<0.001	1.17
SWLS	19.77	6.66	25.76	5.79	**-7.93**	<0.001	0.99
PTGI	19.88	10.53	18.67	11.23	0.93	0.354	0.11

Notes. Probable PTSD defined by PCL-5 scores $\geq$ 33; Probable PTSD n = 99; Non-Probable PTSD n = 268.
LEC-5, Life Events Checklist for the DSM-5; PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item; MIA-PSP, Moral Injury Assessment for Public Safety Personnel; PHQ-9, Patient Health Questionnaire-9; GAD-7, Generalized Anxiety Disorder-7; SWLS, Satisfaction with Life Scale; PTGI, Posttraumatic Growth Inventory-Short Form
Bold text denotes significant effect at $p < .05$.

Hypotheses 3 & 4: Hierarchical Regression Findings for Traumatic Stress-Related Outcomes

Posttraumatic Stress Disorder

A four-step hierarchical regression model was analyzed with PTSD severity, based on total PCL-5 scores, as the dependent variable (see Table 12 for model results). In Step 1, greater years of service ($B = 0.18$, $p = 0.042$), PSQ-Op ($B = 06.35$, $p < 0.001$), and Org ($B = 2.35$, $p = 0.015$) were all significantly associated with greater PTSD severity and accounted for 28% of the adjusted variance in these symptoms [$F(3,362) = 47.29$, $p < 0.001$].

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which remained significant [$F(7,358) = 39.75$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (15%) in PCL-5 scores [$\Delta F(4,358) = 24.77$, $p < 0.001$]. When added to the model, greater ACE-Q ($B = 1.45$, $p < 0.001$) and lessened MSPSS ($B = -2.57$, $p = 0.007$) and SCS ($B = -7.75$, $p < 0.001$) were significantly associated with greater PTSD severity. PSQ-Op ($B = 4.19$, $p < 0.001$) remained associated with PTSD severity, whereas years of service and PSQ-Org were no longer significant.

In Step 3, the model remained significant [$F(13,352) = 24.40$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 3% of the adjusted variance in PTSD severity, which was a significant improvement [$\Delta F(6,352) = 4.10$, $p < 0.001$]. PSQ-Op ($B = 3.78$, $p < 0.001$), ACE-Q ($B = 1.31$, $p < 0.001$), and SCS ($B = -5.72$, $p < 0.001$) continued to be significantly associated with PTSD severity, with years of service ($B = 0.16$, $p = 0.046$) once again significant. Greater AMS ($B = 0.87$, $p < 0.001$) and lessened PTSP-Ben ($B = -2.08$, $p = 0.047$) were also significantly associated with greater PTSD severity.

The addition of PTCI in Step 4 led to a significant [F(14,351) = 27.84, p < 0.001] and improved model [ΔF(1,351) = 38.61, p < 0.001], explaining an additional 5% of the adjusted variance in PTSD severity. Controlling for all other independent variables in this final model, years of service (B = 0.15, p = 0.045), PSQ-Op (B = 3.54, p < 0.001), ACE-Q (B = 1.13, p = 0.002), SCS (B = -4.71, p < 0.001), and AMS (B = 0.56, p = 0.021) continued to be significantly associated with PTSD severity, whereas PTSP-Ben was not. Greater PTCI was significantly associated with greater PTSD severity when controlling for all other independent variables (B = 5.29, p < 0.001). The final model accounted for 51% of the adjusted variance in PTSD severity, which was a large effect size.

Table 12

Hierarchical Regression Results for Posttraumatic Stress Disorder

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj R^2	ΔR^2	ΔF
Step 1							0.28	0.28	47.29**
Years of Service	**0.18**	**0.09**	**0.09**	**[0.01, 0.35]**	**2.04**	**0.042**			
PSQ-Op	**6.35**	**0.89**	**0.43**	**[4.60, 8.09]**	**7.16**	**<0.001**			
PSQ-Org	**2.35**	**0.96**	**0.15**	**[0.46, 4.24]**	**2.45**	**0.015**			
Step 2							0.43	0.15	24.77**
Years of Service	0.13	0.08	0.07	[-0.02, 0.29]	1.69	0.092			
PSQ-Op	**4.19**	**0.83**	**0.28**	**[2.57, 5.81]**	**5.07**	**<0.001**			
PSQ-Org	1.52	0.89	0.10	[-0.23, 3.26]	1.71	0.088			
ACE-Q	**1.45**	**0.39**	**0.15**	**[0.68, 2.21]**	**3.70**	**<0.001**			
MSPSS	**-2.57**	**0.95**	**-0.12**	**[-4.43, -0.71]**	**-2.71**	**0.007**			
Job Satisfaction	-0.26	0.53	-0.02	[-1.29, 0.78]	-0.49	0.625			
SCS	**-7.75**	**1.13**	**-0.32**	**[-9.97, -5.54]**	**-6.90**	**<0.001**			
Step 3							0.46	0.03	4.10**
Years of Service	**0.16**	**0.08**	**0.08**	**[0.01, .31]**	**2.00**	**0.046**			
PSQ-Op	**3.78**	**0.82**	**0.26**	**[2.16, 5.40]**	**4.59**	**<0.001**			
PSQ-Org	0.27	0.91	0.02	[-1.53, 2.06]	0.29	0.769			
ACE-Q	**1.31**	**0.39**	**0.14**	**[0.55, 2.07]**	**3.39**	**<0.001**			
MSPSS	-1.26	1.00	-0.06	[-3.24, 0.71]	-1.26	0.210			
Job Satisfaction	0.24	0.58	0.02	[-0.47, 0.78]	0.42	0.674			
SCS	**-5.72**	**1.23**	**-0.23**	**[-8.13, -3.32]**	**-4.67**	**<0.001**			
SGS	-0.95	1.31	-0.03	[-3.52, 1.62]	-0.73	0.467			
GMS	0.16	0.32	0.03	[-0.47, 0.78]	0.49	0.624			
AMS	**0.87**	**0.25**	**0.18**	**[0.38, 1.37]**	**3.50**	**<0.001**			
WMS	-0.05	0.13	-0.02	[-0.30, 0.20]	-0.36	0.720			
PTSP-Ben	**-2.08**	**1.04**	**-0.10**	**[-4.13, -0.03]**	**-2.00**	**0.047**			
SPP	0.23	0.15	0.08	[0.11, -0.05]	1.58	0.114			
Step 4							0.51	0.05	38.61**
Years of Service	**0.15**	**0.07**	**0.08**	**[0.01, 0.30]**	**2.01**	**0.045**			
PSQ-Op	**3.54**	**0.78**	**0.24**	**[2.00, 5.08]**	**4.51**	**<0.001**			
PSQ-Org	-0.28	0.87	-0.02	[-2.00, 1.43]	-0.33	0.745			
ACE-Q	**1.13**	**0.37**	**0.12**	**[0.41, 1.85]**	**3.07**	**0.002**			

MSPSS	-0.64	0.96	-0.03	[-2.52, 1.25]	-0.66	0.508
Job Satisfaction	0.18	0.55	0.02	[-0.90, 1.27]	0.33	0.743
SCS	**-4.71**	**1.18**	**-0.19**	**[-7.03, -2.40]**	**-4.01**	**<0.001**
SGS	0.10	1.25	0.00	[-2.40, 2.57]	0.08	0.934
GMS	0.24	0.30	0.04	[-0.36, 0.83]	0.78	0.435
AMS	**0.56**	**0.24**	**0.12**	**[0.09, 1.04]**	**2.32**	**0.021**
WMS	0.05	0.12	0.02	[-0.19, 0.29]	0.39	0.701
PTSP-Ben	-1.69	0.99	-0.08	[-3.64, 0.27]	-1.70	0.090
SPP	0.22	0.14	0.08	[-0.05, 0.50]	1.61	0.108
PTCI	**5.29**	**0.85**	**0.30**	**[3.62, 6.97]**	**6.21**	**<0.001**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

** $p < 0.001$

Bold text denotes significant effect at $p < .05$.

Moral Injury – Emotional Sequelae

A four-step hierarchical regression model was analyzed with MI emotional sequelae, based on MIA-PSP-Emotional Sequelae scores, as the dependent variable (see Table 13 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 21% of the adjusted variance in MI emotional sequelae [$F(3,360) = 33.44$, $p < 0.001$]. Only greater PSQ-Op was significantly associated with greater MI emotional sequelae ($B = 2.83$, $p < 0.001$).

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,356) = 42.13$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (23%) in MIA-PSP-Emotional Sequelae scores [$\Delta F(4,356) = 33.44$, $p < 0.001$]. When added to the model, greater ACE-Q ($B = 0.60$, $p < 0.001$) and lessened SCS ($B = -4.63$, $p < 0.001$) were significantly associated with greater MI emotional sequelae. PSQ-Op ($B = 1.65$, $p < 0.001$) continued to be significantly associated with MI emotional sequelae.

In Step 3, the model continued to be significant [$F(13,350) = 27.39$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 4% of the adjusted variance in MIA-PSP-Emotional Sequelae scores, which was a significant improvement [$\Delta F(6,350) = 6.03$, $p < 0.001$]. PSQ-Op ($B = 1.37$, $p < 0.001$), ACE-Q ($B = 0.51$, $p = 0.003$), and SCS ($B = -3.37$, $p < 0.001$) continued to be significantly associated with MI emotional sequelae. Greater AMS ($B = 0.87$, $p < 0.001$) and SPP ($B = 0.12$, $p = 0.049$) were also significantly associated with greater MI emotional sequelae.

The addition of PTCI in Step 4 led to a significant [$F(14,349) = 31.15$, $p < 0.001$] and improved model [$\Delta F(1,349) = 40.14$, $p < 0.001$], explaining an additional 5% of the adjusted variance in MIA-PSP-Emotional Sequelae scores. Controlling for all other independent variables

in this final model, PSQ-Op (B = 1.27, p < 0.001), ACE-Q (B = 0.43, p = 0.007), SCS (B = -2.93, p < 0.001), AMS (B = 0.30, p = 0.004), and SPP (B = 0.12, p < 0.001) continued to be significantly associated with MI emotional sequelae. Lessened PSQ-Org was also significantly associated with MI emotional sequelae; this may be explained by suppression effects as we see a sign flip between Step 1 and 2. When added to the model, greater PTCI was significantly associated with greater MI emotional sequelae when controlling for all other independent variables (B = 2.32, p < 0.001). The final model accounted for 54% of the adjusted variance in MI emotional sequelae, which was a large effect size.

Table 13

Hierarchical Regression Results for Moral Injury - Emotional Sequelae

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj R^2	ΔR^2	ΔF
Step 1							0.21	0.21	33.44**
Years of Service	0.01	0.04	0.01	[-0.07, 0.09]	0.20	0.840			
PSQ-Op	**2.83**	**0.41**	**0.43**	**[2.02, 3.64]**	**6.89**	**<0.001**			
PSQ-Org	0.35	0.45	0.05	[-0.53, 1.23]	0.78	0.437			
Step 2							0.44	0.23	38.26**
Years of Service	0.00	0.04	0.00	[-0.07, 0.07]	-0.07	0.944			
PSQ-Op	**1.65**	**0.36**	**0.25**	**[0.94, 2.37]**	**4.57**	**<0.001**			
PSQ-Org	-0.23	0.39	-0.03	[-1.00, 0.53]	-0.59	0.553			
ACE-Q	**0.60**	**0.17**	**0.14**	**[0.26, 0.93]**	**3.50**	**<0.001**			
MSPSS	-0.81	0.42	-0.08	[-1.63, 0.00]	-1.96	0.051			
Job Satisfaction	-0.50	0.23	-0.09	[-0.96, -0.05]	-2.19	0.029			
SCS	**-4.63**	**0.49**	**-0.43**	**[-5.60, -3.66]**	**-9.43**	**<0.001**			
Step 3							0.49	0.04	6.03**
Years of Service	0.00	0.03	0.00	[-0.07, 0.07]	-0.02	0.981			
PSQ-Op	**1.37**	**0.36**	**0.21**	**[0.67, 20.8]**	**3.86**	**<0.001**			
PSQ-Org	-0.71	0.40	-0.10	[-1.48, 0.07]	-1.79	0.074			
ACE-Q	**0.51**	**0.17**	**0.12**	**[0.18, 0.83]**	**3.04**	**0.003**			
MSPSS	-0.21	0.43	-0.02	[-1.06, 0.64]	-0.49	0.624			
Job Satisfaction	-0.29	0.25	-0.06	[-0.78, 0.20]	-1.18	0.240			
SCS	**-3.37**	**0.53**	**-0.31**	**[-4.41, -2.34]**	**-6.41**	**<0.001**			
SGS	-1.05	0.57	-0.08	[-2.16, 0.07]	-1.85	0.065			
GMS	-0.13	0.14	-0.05	[-0.40, 0.14]	-0.91	0.361			
AMS	**0.44**	**0.11**	**0.20**	**[0.22. 0.65]**	**4.05**	**<0.001**			
WMS	-0.02	0.06	-0.02	[-0.13, 0.09]	-4.04	0.686			
PTSP-Ben	0.08	0.45	0.01	[-0.81, 0.96]	0.17	0.862			
SPP	**0.12**	**0.06**	**0.10**	**[0.00, 0.25]**	**1.98**	**0.049**			
Step 4							0.54	0.05	40.14**
Years of Service	0.00	0.03	0.00	[-0.07, 0.06]	-0.08	0.936			
PSQ-Op	**1.27**	**0.34**	**0.20**	**[0.61, 1.94]**	**3.76**	**<0.001**			
PSQ-Org	**-0.93**	**0.38**	**-0.13**	**[-1.67, -0.19]**	**-2.48**	**0.014**			
ACE-Q	**0.43**	**0.16**	**0.10**	**[0.12, 0.74]**	**2.71**	**0.007**			

MSPSS	0.06	0.41	0.01	[-0.76, 0.87]	0.13	0.895
Job Satisfaction	-0.32	0.24	-0.06	[-0.78, 0.15]	-1.35	0.179
SCS	**-2.93**	**0.50**	**-0.27**	**[-3.92, -1.94]**	**-5.82**	**<0.001**
SGS	-0.54	0.54	-0.04	[-1.61, 0.53]	-1.00	0.318
GMS	-0.09	0.13	-0.04	[-0.35, 0.16]	-0.71	0.479
AMS	**0.30**	**0.10**	**0.14**	**[0.10, 0.50]**	**2.88**	**0.004**
WMS	0.02	0.05	0.02	[-0.08, 0.12]	0.36	0.723
PTSP-Ben	0.25	0.43	0.03	[-0.59, 1.08]	0.58	0.565
SPP	**0.12**	**0.06**	**0.09**	**[0.00, 0.24]**	**2.03**	**0.043**
PTCI	**2.32**	**0.37**	**0.30**	**[1.60, 3.04]**	**6.34**	**<0.001**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

** $p < 0.001$

Bold text denotes significant effect at $p < 0.05$.

Moral Injury – Perpetrations

A four-step hierarchical regression model was analyzed with MI perpetrations, based on MIA-PSP-Perpetrations scores, as the dependent variable (see Table 14 for model results). A Log base 10 transformation was applied to the MIA-PSP-Perpetrations variable leading to multivariate normality, which makes the beta values less easily interpretable. In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 7% of the adjusted variance in MI perpetrations [$F(3,361) = 10.01$, $p < 0.001$]. Only greater PSQ-Op was significantly associated with greater MI perpetrations ($B = 0.029$, $p = 0.005$).

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,357) = 7.18$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (4%) in MIA-PSP-Perpetrations scores [$\Delta F(4,357) = 4.75$, $p < 0.001$]. When added to the model, greater ACE-Q ($B = 0.014$, $p = 0.006$) and lessened Job Satisfaction ($B = -0.017$, $p = 0.010$) were significantly associated with greater MI perpetrations. PSQ-Op ($B = 0.029$, $p = 0.035$) continued to be significantly associated with MI perpetrations.

In Step 3, the model continued to be significant [$F(13,351) = 4.46$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced, but did not account for any additional adjusted variance in MIA-PSP-Perpetrations scores [$\Delta F(6,351) = 1.25$, $p = 0.282$]. ACE-Q ($B = 0.014$, $p = 0.005$) continued to be significantly associated with MI perpetrations, whereas PSQ-Op and Job Satisfaction were no longer significant. Greater SPP ($B = 0.004$, $p = 0.027$) was also significantly associated with greater MI perpetrations.

The addition of PTCI in Step 4 led to a significant [$F(14,350) = 4.64$, $p < 0.001$] and improved model [$\Delta F(1,350) = 6.16$, $p = 0.014$], explaining an additional 1% of the adjusted variance in MIA-PSP-Perpetrations scores. Controlling for all other independent variables in this

final model, ACE-Q (B = 0.013, p = 0.008) and SPP (B = 0.004, p = 0.027) continued to be significantly associated with MI perpetrations. When added to the model, greater PTCI was significantly associated with greater MI perpetrations when controlling for all other independent variables (B = 0.029, p = 0.014). The final model accounted for 12% of the adjusted variance in MI perpetrations, which was a small effect size.

Table 14

Hierarchical Regression Results for Moral Injury - Perpetrations

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.07	0.07	10.01**
Years of Service	0.002	0.00	0.09	[0.000, 0.004]	1.65	0.100			
PSQ-Op	**0.029**	**0.01**	**0.19**	**[0.009, 0.049]**	**2.84**	**0.005**			
PSQ-Org	0.018	0.01	0.11	[-0.004, 0.039]	1.62	0.107			
Step 2							0.11	0.04	4.75**
Years of Service	0.002	0.00	0.09	[0.000, 0.004]	1.75	0.081			
PSQ-Op	**0.022**	**0.01**	**0.15**	**[0.002, 0.043]**	**2.11**	**0.035**			
PSQ-Org	0.009	0.01	0.05	[-0.013, 0.030]	0.77	0.442			
ACE-Q	**0.014**	**0.01**	**0.14**	**[0.004, 0.023]**	**2.78**	**0.006**			
MSPSS	-0.002	0.01	-0.01	[-0.026, 0.021]	-0.18	0.857			
Job Satisfaction	**-0.017**	**0.01**	**-0.14**	**[-0.030, -0.004]**	**-2.58**	**0.010**			
SCS	-0.016	0.01	-0.06	[-0.049, 0.005]	-1.10	0.271			
Step 3							0.11	0.00	1.25
Years of Service	0.002	0.00	0.09	[0.000, 0.004]	1.73	0.085			
PSQ-Op	0.019	0.01	0.13	[-0.002, 0.040]	1.75	0.081			
PSQ-Org	0.003	0.01	0.02	[-0.020, 0.026]	0.25	0.804			
ACE-Q	**0.014**	**0.01**	**0.14**	**[0.004, 0.024]**	**2.82**	**0.005**			
MSPSS	0.007	0.01	0.03	[-0.018, 0.032]	0.54	0.590			
Job Satisfaction	-0.014	0.01	-0.11	[-0.028, 0.001]	-1.80	0.072			
SCS	-0.004	0.02	-0.02	[-0.035, 0.027]	-0.23	0.818			
SGS	-0.002	0.02	-0.01	[-0.035, 0.031]	-0.10	0.918			
GMS	-0.005	0.00	-0.09	[-0.013, 0.003]	-1.29	0.197			
AMS	-0.002	0.00	-0.04	[-0.008, 0.004]	-0.58	0.563			
WMS	-0.001	0.00	-0.05	[-0.004, 0.002]	-0.71	0.476			
PTSP-Ben	0.008	0.01	0.04	[-0.018, 0.035]	0.61	0.544			
SPP	**0.004**	**0.00**	**0.14**	**[0.000, 0.008]**	**2.22**	**0.027**			
Step 4							0.12	0.01	6.16*
Years of Service	0.002	0.00	0.09	[0.000, 0.004]	1.69	0.091			
PSQ-Op	0.017	0.01	0.12	[-0.003, 0.038]	1.64	0.102			
PSQ-Org	0.000	0.01	0.00	[-0.023, 0.023]	0.00	0.997			
ACE-Q	**0.013**	**0.01**	**0.14**	**[0.003, 0.023]**	**2.65**	**0.008**			

MSPSS	0.010	0.01	0.05	[-0.015, 0.036]	0.79	0.428
Job Satisfaction	-0.014	0.01	-0.12	[-0.029, 0.001]	-1.89	0.060
SCS	0.002	0.02	0.01	[-0.029, 0.033]	0.11	0.913
SGS	0.004	0.02	0.01	[-0.029, 0.037]	0.25	0.806
GMS	-0.005	0.00	-0.08	[-0.013, 0.003]	-1.18	0.238
AMS	-0.004	0.00	-0.07	[-0.010, 0.003]	-1.10	0.273
WMS	-0.001	0.00	-0.03	[-0.004, 0.003]	-0.39	0.695
PTSP-Ben	0.010	0.01	0.05	[-0.016, 0.036]	0.75	0.453
SPP	**0.004**	**0.00**	**0.14**	**[0.000, 0.008]**	**2.22**	**0.027**
PTCI	**0.029**	**0.01**	**0.16**	**[0.006, 0.051]**	**2.48**	**0.014**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

* $p <$ 0.05 ** $p <$ 0.001

Bold text denotes significant effect at p <0.05.

Beta weights are based on Log base 10 transformation of the MIA-PSP-Perpetrations variable

Moral Injury – Betrayals

A four-step hierarchical regression model was analyzed with MI betrayals, based on MIA-PSP-Betrayals scores, as the dependent variable (see Table 15 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 32% of the adjusted variance in MI betrayals [$F(3,363) = 59.34$, $p < 0.001$]. Greater PSQ-Op ($B = 0.76$, $p = 0.028$) and PSQ-Org ($B = 3.04$, $p < 0.001$) were significantly associated with greater MI betrayals.

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,359) = 31.73$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (5%) in MIA-PSP-Betrayals scores [$\Delta F(4,359) = 7.73$, $p < 0.001$]. When added to the model, greater ACE-Q ($B = 0.34$, $p = 0.041$) and Job Satisfaction ($B = -0.96$, $p < 0.001$) were significantly associated with greater and lesser MI betrayals, respectively. PSQ-Org ($B = 2.60$, $p < 0.001$) continued to be significantly associated with MI betrayals, whereas PSQ-Op was no longer significant.

In Step 3, the model continued to be significant [$F(13,353) = 19.51$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced, and accounted for statistically greater adjusted variance (3%) in MIA-PSP-Betrayals scores [$\Delta F(6,353) = 3.63$, $p < 0.05$]. When added to the model, greater AMS ($B = 0.37$, $p < 0.001$) and PTSP-Ben ($B = -0.93$, $p = 0.036$) were significantly associated with greater and lesser MI betrayals, respectively. PSQ-Org ($B = 2.60$, $p < 0.001$) and Job Satisfaction ($B = -0.75$, $p = 0.002$) continued to be significantly associated with MI betrayals, whereas ACE-Q was no longer significant.

The addition of PTCI in Step 4 led to a significant [$F(14,352) = 18.10$, $p < 0.001$] but not improved model [$\Delta F(1,352) = 0.40$, $p > 0.05$. Controlling for all other independent variables in this final model, PSQ-Org ($B = 2.16$, $p < 0.001$), Job Satisfaction ($B = -0.75$, $p = 0.002$), AMS (B

= 0.36, $p < 0.001$) and PTSP-Ben ($B = -0.93$, $p = 0.039$) continued to be significantly associated with MI betrayals. The final model accounted for 40% of the adjusted variance in MI betrayals, which was a large effect size.

Table 15

Hierarchical Regression Results for Moral Injury – Betrayals

Model	*B*	SE	*β*	95% CI	*t*	*P*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.32	0.32	59.34**
Years of Service	-0.02	0.03	-0.02	[-0.08, 0.05]	-0.47	0.641			
PSQ-Op	**0.76**	**0.35**	**0.13**	**[0.08, 1.44]**	**2.21**	**0.028**			
PSQ-Org	**3.04**	**0.37**	**0.48**	**[2.31, 3.78]**	**8.15**	**<0.001**			
Step 2							0.37	0.05	7.73**
Years of Service	-0.01	0.03	-0.01	[-0.07, 0.06]	-0.24	0.813			
PSQ-Op	0.46	0.35	0.08	[-0.23, 1.14]	1.31	0.191			
PSQ-Org	**2.60**	**0.37**	**0.41**	**[1.87, 3.34]**	**6.99**	**<0.001**			
ACE-Q	**0.34**	**0.17**	**0.09**	**[0.01, 0.66]**	**2.05**	**0.041**			
MSPSS	-0.19	0.40	-0.02	[-0.97, 0.60]	-0.47	0.637			
Job Satisfaction	**-0.96**	**0.22**	**-0.20**	**[-1.40, -0.53]**	**-4.33**	**<0.001**			
SCS	-0.63	0.47	-0.06	[-1.56, 0.31]	-1.32	0.188			
Step 3							0.40	0.03	3.63*
Years of Service	0.00	0.03	0.00	[-0.06, 0.07]	0.03	0.975			
PSQ-Op	0.40	0.35	0.07	[-0.28, 1.09]	1.16	0.249			
PSQ-Org	**2.18**	**0.39**	**0.34**	**[1.42, 2.94]**	**5.65**	**<0.001**			
ACE-Q	0.29	0.16	0.07	[-0.03, 0.61]	1.76	0.079			
MSPSS	0.24	0.43	0.03	[-0.60, 1.08]	0.57	0.571			
Job Satisfaction	**-0.75**	**0.25**	**-0.16**	**[-1.23, -0.27]**	**-3.06**	**0.002**			
SCS	-0.11	0.52	-0.01	[-1.13, 0.91]	-0.21	0.833			
SGS	0.06	0.55	0.01	[-1.02, 1.15]	0.11	0.911			
GMS	0.20	0.14	0.08	[-0.07, 0.46]	1.47	0.144			
AMS	**0.37**	**0.11**	**0.19**	**[0.17, 0.58]**	**3.53**	**<0.001**			
WMS	-0.05	0.05	-0.05	[-0.15, 0.06]	-0.91	0.365			
PTSP-Ben	**-0.93**	**0.44**	**-0.11**	**[-1.80, -0.06]**	**-2.11**	**0.036**			
SPP	0.02	0.06	0.02	[-0.10, 0.14]	0.28	0.780			
Step 4							0.40	0.00	0.29
Years of Service	0.00	0.03	0.00	[-0.06, 0.07]	0.02	0.981			
PSQ-Op	0.39	0.35	0.07	[-0.29, 1.08]	1.13	0.261			
PSQ-Org	**2.16**	**0.39**	**0.34**	**[1.40, 2.93]**	**5.56**	**<0.001**			
ACE-Q	0.28	0.16	0.07	[-0.04, 0.60]	1.71	0.088			
MSPSS	0.27	0.43	0.03	[-0.58, 1.11]	0.62	0.536			

Job Satisfaction	**-0.75**	**0.25**	**-0.16**	**[-1.24, -0.27]**	**-3.07**	**0.002**
SCS	-0.07	0.52	-0.01	[-1.10, 0.96]	-0.13	0.894
SGS	0.10	0.56	0.01	[-0.99, 1.20]	0.19	0.853
GMS	0.20	0.14	0.08	[-0.07, 0.47]	1.49	0.138
AMS	**0.36**	**0.11**	**0.19**	**[0.15, 0.57]**	**3.33**	**<0.001**
WMS	-0.05	0.05	-0.05	[-0.15, 0.06]	-0.83	0.405
PTSP-Ben	**-0.92**	**0.44**	**-0.10**	**[-1.79, -0.05]**	**-2.07**	**0.039**
SPP	0.02	0.06	0.01	[-0.11, 0.14]	0.28	0.783
PTCI	0.21	0.38	0.03	[-0.54, 0.95]	0.54	0.589

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

*$p < 0.05$ ** $p < 0.001$

Bold text denotes significant effect at $p < 0.05$.

Depression

A four-step hierarchical regression model was analyzed with depression severity, based on total PHQ-9 scores, as the dependent variable (see Table 16 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 21% of the adjusted variance in depression severity [$F(3,363) = 33.81$, $p < 0.001$]. Greater PSQ-Op ($B = 1.53$, $p < 0.001$) and PSQ-Org ($B = 0.96$, $p = 0.003$) were significantly associated with greater depression.

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,359) = 36.14$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (19%) in PHQ-9 scores [$\Delta F(4,359) = 29.83$, $p < 0.001$]. When added to the model, greater ACE-Q ($B = 0.33$, $p = 0.009$) and lessened MSPSS ($B = -1.24$, $p < 0.001$), Job Satisfaction ($B = -0.61$, $p < 0.001$), and SCS ($B = -2.25$, $p < 0.001$) were significantly associated with greater depression severity. PSQ-Op ($B = 0.73$, $p = 0.006$) and PSQ-Org ($B = 0.57$, $p = 0.048$) continued to be significantly associated with depression severity.

In Step 3, the model continued to be significant [$F(13,353) = 26.04$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 9% of the adjusted variance in depression severity, which was a significant improvement [$\Delta F(6,353) = 8.78$, $p < 0.001$]. MSPSS ($B = -0.88$, $p = 0.005$), Job Satisfaction ($B = -0.53$, $p = 0.004$), and SCS ($B = -1.25$, $p = 0.001$) continued to be significantly associated with depression severity, whereas PSQ-Op, PSQ-Org, and ACE-Q were no longer significant. Lessened SGS ($B = -1.10$, $p = 0.007$) and greater AMS ($B = 0.44$, $p < 0.001$) were also significantly associated with greater depression severity.

The addition of PTCI in Step 4 led to a significant [$F(14,352) = 26.82$, $p < 0.001$] and improved model [$\Delta F(1,352) = 19.33$, $p < 0.001$], explaining an additional 3% of the adjusted

variance in depression severity. Controlling for all other independent variables in this final model, MSPSS (B = -0.74, p = 0.017), Job Satisfaction (B = -0.54, p = 0.002), SCS (B = -1.02, p = 0.007), SGS (B = -0.86, p = 0.032), and AMS (B = 0.37, $p < 0.001$) continued to be significantly associated with depression severity. Greater PTCI was significantly associated with greater depression severity when controlling for all other independent variables (B = 1.20, $p <$ 0.001). The final model accounted for 52% of the adjusted variance in depression severity, which was a large effect size.

Table 16

Hierarchical Regression Results for Depression

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.21	0.21	33.81**
Years of Service	0.04	0.03	0.07	[-0.01, 0.10]	1.50	0.134			
PSQ-Op	**1.53**	**0.29**	**0.33**	**[0.95, 2.10]**	**5.22**	**<0.001**			
PSQ-Org	**0.96**	**0.32**	**0.19**	**[0.34, 1.58]**	**3.02**	**0.003**			
Step 2							0.40	0.19	29.83**
Years of Service	0.03	0.03	0.05	[-0.02, 0.08]	1.23	0.221			
PSQ-Op	**0.73**	**0.27**	**0.16**	**[0.21, 1.26]**	**2.75**	**0.006**			
PSQ-Org	**0.57**	**0.29**	**0.11**	**[0.01, 1.13]**	**1.99**	**0.048**			
ACE-Q	**0.33**	**0.13**	**0.11**	**[0.09, 0.58]**	**2.64**	**0.009**			
MSPSS	**-1.24**	**0.31**	**-0.18**	**[-1.84, -0.64]**	**-4.07**	**<0.001**			
Job Satisfaction	**-0.61**	**0.17**	**-0.16**	**[-0.94, -0.28]**	**-3.60**	**<0.001**			
SCS	**-2.25**	**0.36**	**-0.29**	**[-2.97, -1.54]**	**-6.21**	**<0.001**			
Step 3							0.49	0.09	8.78**
Years of Service	0.03	0.02	0.06	[-0.01, 0.08]	1.39	0.167			
PSQ-Op	0.49	0.26	0.10	[-0.02, 0.99]	1.89	0.059			
PSQ-Org	0.20	0.28	0.04	[-0.36, 0.76]	0.70	0.486			
ACE-Q	0.23	0.12	0.08	[-0.01, 0.47]	1.93	0.054			
MSPSS	**-0.88**	**0.31**	**-0.13**	**[-1.49, -0.26]**	**-2.80**	**0.005**			
Job Satisfaction	**-0.53**	**0.18**	**-0.14**	**[-0.88, -0.17]**	**-2.92**	**0.004**			
SCS	**-1.25**	**0.38**	**-0.16**	**[-2.00, -0.50]**	**-3.27**	**0.001**			
SGS	**-1.10**	**0.41**	**-0.12**	**[-1.90, -0.30]**	**-2.72**	**0.007**			
GMS	-0.03	0.10	-0.02	[-0.22, 0.17]	-0.28	0.780			
AMS	**0.44**	**0.08**	**0.29**	**[0.29, 0.60]**	**5.70**	**<0.001**			
WMS	0.04	0.04	0.05	[-0.04, 0.11]	0.90	0.370			
PTSP-Ben	-0.10	0.33	-0.02	[-0.74, 0.54]	-0.32	0.753			
SPP	0.07	0.05	0.08	[-0.02, 0.16]	1.59	0.112			
Step 4							0.52	0.03	19.33**
Years of Service	0.03	0.02	0.05	[-0.02, 0.08]	1.36	0.176			
PSQ-Op	0.43	0.25	0.09	[-0.06, 0.92]	1.72	0.086			
PSQ-Org	0.08	0.28	0.02	[-0.47, 0.62]	0.27	0.788			
ACE-Q	0.19	0.12	0.06	[-0.04, 0.42]	1.64	0.103			

MSPSS	**-0.74**	**0.31**	**-0.11**	**[-1.34, -0.13]**	**-2.40**	**0.017**
Job Satisfaction	**-0.54**	**0.18**	**-0.14**	**[-0.89, -0.19]**	**-3.07**	**0.002**
SCS	**-1.02**	**0.38**	**-0.13**	**[-1.76, -0.28]**	**-2.71**	**0.007**
SGS	**-0.86**	**0.40**	**-0.09**	**[-1.65, -0.07]**	**-2.15**	**0.032**
GMS	-0.01	0.10	-0.01	[-0.20, 0.18]	-0.10	0.919
AMS	**0.37**	**0.08**	**0.25**	**[0.22, 0.53]**	**4.81**	**<0.001**
WMS	0.06	0.04	0.08	[-0.02, 0.13]	1.45	0.149
PTSP-Ben	-0.02	0.32	0.00	[-0.64, 0.61]	-0.05	0.961
SPP	0.07	0.04	0.08	[-0.02, 0.16]	1.60	0.111
PTCI	**1.20**	**0.27**	**0.21**	**[0.66, 1.73]**	**4.40**	**<0.001**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

** $p < 0.001$

Bold text denotes significant effect at $p < .05$.

Generalized Anxiety

A four-step hierarchical regression model was analyzed with anxiety severity, based on total GAD-7 scores, as the dependent variable (see Table 17 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 16% of the adjusted variance in anxiety severity [$F(3,363) = 23.96$, $p < 0.001$]. Greater PSQ-Op ($B = 1.48$, $p < 0.001$) was significantly associated with greater anxiety.

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,359) = 29.62$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (20%) in GAD-7 scores [$\Delta F(4,359) = 28.43$, $p < 0.001$]. When added to the model, greater SCS ($B = -3.31$, $p < 0.001$) was significantly associated with lessened anxiety. PSQ-Op ($B = 0.82$, $p = 0.002$) continued to be significantly associated with anxiety severity.

In Step 3, the model continued to be significant [$F(13,353) = 18.08$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 2% of the adjusted variance in depression severity, which was a significant improvement [$\Delta F(6,353) = 3.29$, $p = 0.004$]. PSQ-Op ($B = 0.64$, $p = 0.013$) and SCS ($B = -2.72$, $p < 0.001$) continued to be significantly associated with anxiety severity. Lessened SGS ($B = -0.84$, $p = 0.039$) and greater AMS ($B = 0.25$, $p < 0.001$) were also significantly associated with greater anxiety severity.

The addition of PTCI in Step 4 led to a significant [$F(14,352) = 18.00$, $p < 0.001$] and improved model [$\Delta F(1,352) = 10.61$, $p = 0.001$], explaining an additional 2% of the adjusted variance in anxiety severity. Controlling for all other independent variables in this final model, PSQ-Op ($B = 0.60$, $p = 0.019$), SCS ($B = -2.55$, $p < 0.001$), and AMS ($B = 0.20$, $p = 0.011$)

continued to be significantly associated with anxiety severity, whereas SGS was not. Greater PTCI was significantly associated with greater anxiety severity when controlling for all other independent variables ($B = 0.90$, $p < 0.001$). The final model accounted for 39% of the adjusted variance in anxiety severity, which was a large effect size.

Table 17

Hierarchical Regression Results for Anxiety

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.16	0.16	23.96**
Years of Service	-0.01	0.03	-0.02	[-0.07, 0.04]	-0.43	0.665			
PSQ-Op	**1.48**	**0.28**	**0.34**	**[0.93, 2.03]**	**5.32**	**<0.001**			
PSQ-Org	0.37	0.30	0.08	[-0.22, 0.96]	1.23	0.221			
Step 2							0.35	0.20	28.43**
Years of Service	-0.01	0.03	-0.02	[-0.06, 0.04]	-0.45	0.654			
PSQ-Op	**0.82**	**0.26**	**0.19**	**[0.31, 1.32]**	**3.19**	**0.002**			
PSQ-Org	-0.03	0.27	-0.01	[-0.57, 0.51]	-0.11	0.910			
ACE-Q	0.13	0.12	0.05	[-0.11, 0.37]	1.07	0.286			
MSPSS	0.08	0.29	0.01	[-0.49, 0.66]	0.28	0.780			
Job Satisfaction	-0.30	0.16	-0.09	[-0.62, 0.02]	-1.87	0.062			
SCS	**-3.31**	**0.35**	**-0.46**	**[-3.99, -2.62]**	**-9.51**	**<0.001**			
Step 3							0.38	0.02	3.29*
Years of Service	-0.01	0.02	-0.02	[-0.06, 0.04]	-0.49	0.626			
PSQ-Op	**0.64**	**0.26**	**0.15**	**[0.14, 1.15]**	**2.50**	**0.013**			
PSQ-Org	-0.23	0.28	-0.05	[-0.79, 0.3]	-0.82	0.412			
ACE-Q	0.07	0.12	0.03	[-0.17, 0.33]	0.59	0.556			
MSPSS	0.22	0.31	0.04	[-0.39, 0.84]	0.72	0.475			
Job Satisfaction	-0.23	0.18	-0.06	[-0.58, 0.13]	-1.26	0.210			
SCS	**-2.72**	**0.38**	**-0.38**	**[-3.47, -1.97]**	**-7.14**	**<0.001**			
SGS	**-0.84**	**0.41**	**-0.10**	**[-1.64, -0.04]**	**-2.07**	**0.039**			
GMS	0.05	0.10	0.03	[-0.15, 0.24]	0.50	0.620			
AMS	**0.25**	**0.08**	**0.18**	**[0.10, 0.41]**	**3.24**	**0.001**			
WMS	0.00	0.04	0.00	[-0.08, 0.08]	-0.02	0.987			
PTSP-Ben	0.17	0.32	0.03	[-0.47, 0.81]	0.52	0.606			
SPP	0.06	0.05	0.07	[-0.03, 0.15]	1.36	0.175			
Step 4							0.39	0.02	10.61*
Years of Service	-0.01	0.02	-0.02	[-0.06, 0.03]	-0.54	0.588			
PSQ-Op	**0.60**	**0.25**	**0.14**	**[0.10, 1.10]**	**2.37**	**0.019**			
PSQ-Org	-0.33	0.28	-0.07	[-0.88, 0.23]	-1.16	0.248			
ACE-Q	0.04	0.12	0.02	[-0.19, 0.28]	0.34	0.731			

MSPSS	0.33	0.31	0.05	[-0.28, 0.94]	1.06	0.289
Job Satisfaction	-0.24	0.18	-0.07	[-0.59, 0.11]	-1.33	0.185
SCS	**-2.55**	**0.38**	**-0.36**	**[-3.29, -1.80]**	**-6.71**	**<0.001**
SGS	-0.66	0.40	-0.08	[-1.45, 0.14]	-1.63	0.104
GMS	0.06	0.10	0.04	[-0.13, 0.26]	0.64	0.522
AMS	**0.20**	**0.08**	**0.14**	**[0.05, 0.35]**	**2.54**	**0.011**
WMS	0.02	0.04	0.02	[-0.06, 0.09]	0.38	0.705
PTSP-Ben	0.23	0.32	0.04	[-0.40, 0.86]	0.73	0.469
SPP	0.06	0.05	0.07	[-0.03, 0.15]	1.35	0.177
PTCI	**0.90**	**0.28**	**0.17**	**[0.36, 1.44]**	**3.26**	**0.001**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire, Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

*$p < 0.05$ ** $p < 0.001$

Bold text denotes significant effect at $p < .05$.

Burnout

A four-step hierarchical regression model was analyzed with burnout symptoms, based on total Burnout Measure – Short Version scores, as the dependent variable (see Table 18 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 33% of the adjusted variance in burnout symptoms [$F(3,362) = 61.85$, $p < 0.001$]. Greater PSQ-Op ($B = 0.29$, $p < 0.001$) and PSQ-Org ($B = 0.32$, $p < 0.001$) were significantly associated with greater burnout.

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,358) = 71.85$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (24%) in burnout scores [$\Delta F(4,358) = 52.79$, $p < 0.001$]. When added to the model, greater MSPSS ($B = -0.14$, $p = 0.009$), Job Satisfaction ($B = -0.27$, $p < 0.001$), and SCS ($B = -0.44$, $p < 0.001$) were significantly associated with lessened burnout. PSQ-Op ($B = 0.14$, $p = 0.002$) and PSQ-Org ($B = 0.19$, $p < 0.001$) continued to be significantly associated with burnout severity.

In Step 3, the model continued to be significant [$F(13,352) = 53.33$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 8% of the adjusted variance in burnout severity, which was a significant improvement [$\Delta F(6,352) = 13.78$, $p < 0.001$]. PSQ-Op ($B = 0.11$, $p = 0.010$), PSQ-Org ($B = 0.10$, $p = 0.032$), Job Satisfaction ($B = -0.23$, $p < 0.001$), and SCS ($B = -0.27$, $p < 0.001$) continued to be significantly associated with burnout severity, whereas MSPSS was no longer significant. Greater AMS ($B = 0.10$, $p < 0.001$) was also significantly associated with greater burnout severity.

The addition of PTCI in Step 4 led to a significant [$F(14,351) = 52.24$, $p < 0.001$] and improved model [$\Delta F(1,351) = 13.51$, $p < 0.001$], explaining an additional 1% of the adjusted variance in burnout severity. Controlling for all other independent variables in this final model, PSQ-Op ($B = 0.10$, $p = 0.014$), Job Satisfaction ($B = -0.23$, $p < 0.001$), SCS ($B = -0.24$, $p < 0.001$) and AMS ($B = 0.09$, $p < 0.001$) continued to be significantly associated with burnout severity, whereas PSQ-Org was not. Greater GMS ($B = 0.03$, $p = 0.037$) was also associated with significantly greater burnout severity in this step. When added to the model, greater PTCI was significantly associated with greater burnout severity when controlling for all other independent variables ($B = 0.17$, $p < 0.001$). The final model accounted for 66% of the adjusted variance in burnout severity, which was a large effect size.

Table 18

Hierarchical Regression Results for Burnout

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.33	0.33	61.85**
Years of Service	-0.01	0.01	-0.05	[-0.02, 0.00]	-1.21	0.226			
PSQ-Op	**0.29**	**0.06**	**0.31**	**[0.19, 0.40]**	**5.40**	**<0.001**			
PSQ-Org	**0.32**	**0.06**	**0.31**	**[0.20, 0.43]**	**5.38**	**<0.001**			
Step 2							0.58	0.24	52.79**
Years of Service	-0.01	0.00	-0.04	[-0.01, 0.00]	-1.22	0.224			
PSQ-Op	**0.14**	**0.05**	**0.15**	**[0.05, 0.23]**	**3.16**	**0.002**			
PSQ-Org	**0.19**	**0.05**	**0.18**	**[0.09, 0.28]**	**3.83**	**<0.001**			
ACE-Q	0.03	0.02	0.05	[-0.01, 0.08]	1.53	0.127			
MSPSS	**-0.14**	**0.05**	**-0.10**	**[-0.24, -0.03]**	**-2.62**	**0.009**			
Job Satisfaction	**-0.27**	**0.03**	**-0.36**	**[-0.33, -0.22]**	**-9.45**	**<0.001**			
SCS	**-0.44**	**0.06**	**-0.28**	**[-0.57, -0.32]**	**-7.18**	**<0.001**			
Step 3							0.65	0.08	13.78**
Years of Service	-0.01	0.00	-0.04	[-0.01, 0.00]	-1.20	0.231			
PSQ-Op	**0.11**	**0.04**	**0.12**	**[0.03, 0.19]**	**2.61**	**0.010**			
PSQ-Org	**0.10**	**0.05**	**0.10**	**[0.01, 0.19]**	**2.16**	**0.032**			
ACE-Q	0.02	0.02	0.02	[-0.02, 0.05]	0.74	0.457			
MSPSS	-0.05	0.05	-0.04	[-0.15, 0.05]	-0.96	0.336			
Job Satisfaction	**-0.23**	**0.03**	**-0.30**	**[-0.29, -0.17]**	**-7.68**	**<0.001**			
SCS	**-0.27**	**0.06**	**-0.17**	**[-0.39, -0.15]**	**-4.30**	**<0.001**			
SGS	-0.11	0.07	-0.06	[-0.24, 0.03]	-1.58	0.116			
GMS	0.03	0.02	0.08	[0.00, 0.06]	1.88	0.061			
AMS	**0.10**	**0.01**	**0.32**	**[0.07, 0.12]**	**7.67**	**<0.001**			
WMS	-0.01	0.01	-0.08	[-0.03, 0.00]	-1.82	0.069			
PTSP-Ben	-0.03	0.05	-0.02	[-0.13, 0.08]	-0.53	0.597			
SPP	0.01	0.01	0.06	[0.00, 0.03]	1.55	0.121			
Step 4							0.66	0.01	13.51**
Years of Service	-0.01	0.00	-0.04	[-0.01, 0.00]	-1.27	0.204			
PSQ-Op	**0.10**	**0.04**	**0.11**	**[0.02, 0.18]**	**2.47**	**0.014**			
PSQ-Org	0.08	0.05	0.08	[-0.01, 0.17]	1.81	0.071			
ACE-Q	0.01	0.02	0.01	[-0.03, 0.05]	0.46	0.648			

MSPSS	-0.03	0.05	-0.02	[-0.13, 0.07]	-0.57	0.569
Job Satisfaction	**-0.23**	**0.03**	**-0.30**	**[-0.29, -0.17]**	**-7.88**	**<0.001**
SCS	**-0.24**	**0.06**	**-0.15**	**[-0.36, -0.12]**	**-3.83**	**<0.001**
SGS	-0.07	0.07	-0.04	[-0.20, 0.06]	-1.04	0.298
GMS	**0.03**	**0.02**	**0.09**	**[0.00, 0.07]**	**2.09**	**0.037**
AMS	**0.09**	**0.01**	**0.29**	**[0.06, 0.11]**	**6.88**	**<0.001**
WMS	-0.01	0.01	-0.06	[-0.02, 0.00]	-1.43	0.155
PTSP-Ben	-0.02	0.05	-0.01	[-0.12, 0.09]	-0.30	0.768
SPP	0.01	0.01	0.06	[0.00, 0.03]	1.55	0.122
PTCI	**0.17**	**0.05**	**0.15**	**[0.08, 0.26]**	**3.68**	**<0.001**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

** $p < 0.001$

Bold text denotes significant effect at $p < .05$.

Hypotheses 5 & 6: Hierarchical Regression Findings for Life Satisfaction and Posttraumatic Growth

Satisfaction with Life

A four-step hierarchical regression model was analyzed with satisfaction with life, based on total SWLS scores, as the dependent variable (see Table 19 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 9% of the adjusted variance in life satisfaction [$F(3,363) = 12.30$, $p < 0.001$]. Greater PSQ-Op ($B = -1.14$, $p = 0.002$) was significantly associated with poorer life satisfaction.

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,359) = 33.22$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (30%) in life satisfaction scores [$\Delta F(4,359) = 44.49$, $p < 0.001$]. When added to the model, greater MSPSS ($B = 2.83$, $p < 0.001$), Job Satisfaction ($B = 0.74$, $p < 0.001$), and SCS ($B = 2.79$, $p < 0.001$) were significantly associated with greater life satisfaction. PSQ-Op was no longer significantly associated with life satisfaction.

In Step 3, the model continued to be significant [$F(13,353) = 20.59$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 3% of the adjusted variance in satisfaction with life, which was a significant improvement [$\Delta F(6,353) = 3.95$, $p < 0.001$]. MSPSS ($B = 2.61$, $p < 0.001$), Job Satisfaction ($B = 0.59$, $p = 0.009$), and SCS ($B = 2.39$, $p < 0.001$) continued to be significantly associated with life satisfaction. Greater AMS ($B = -0.37$, $p < 0.001$) was also significantly associated with poorer satisfaction with life.

The addition of PTCI in Step 4 led to a significant [$F(14,352) = 20.23$, $p < 0.001$] and improved model [$\Delta F(1,352) = 9.31$, $p = 0.002$], explaining an additional 1% of the adjusted

variance in life satisfaction. Controlling for all other independent variables in this final model, MSPSS ($B = 2.49$, $p < 0.001$), Job Satisfaction ($B = 0.61$, $p = 0.007$), SCS ($B = 2.19$, $p < 0.001$) and AMS ($B = -0.31$, $p = 0.002$) continued to be significantly associated with life satisfaction. When added to the model, greater PTCI was significantly associated with poorer life satisfaction when controlling for all other independent variables ($B = -1.05$, $p = 0.002$). The final model accounted for 42% of the adjusted variance in burnout severity, which was a large effect size.

Table 19

Hierarchical Regression Results for Satisfaction with Life

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.09	0.09	12.30**
Years of Service	-0.05	0.04	-0.06	[-0.12, 0.03]	-1.24	0.216			
PSQ-Op	**-1.14**	**0.37**	**-0.21**	**[-1.88, -0.41]**	**-3.06**	**0.002**			
PSQ-Org	-0.78	0.40	-0.13	[-1.57, 0.02]	-1.92	0.055			
Step 2							0.38	0.30	44.49**
Years of Service	-0.02	0.03	-0.02	[-0.08, 0.05]	-0.50	0.621			
PSQ-Op	0.08	0.32	0.02	[-0.55, 0.71]	0.26	0.799			
PSQ-Org	-0.42	0.34	-0.07	[-1.09, 0.26]	-1.22	0.222			
ACE-Q	-0.10	0.15	-0.03	[-0.39, 0.20]	-0.63	0.528			
MSPSS	**2.83**	**0.37**	**0.35**	**[2.11, 3.55]**	**7.70**	**<0.001**			
Job Satisfaction	**0.74**	**0.20**	**0.16**	**[0.34, 1.14]**	**3.62**	**<0.001**			
SCS	**2.79**	**0.44**	**0.31**	**[1.93, 3.65]**	**6.38**	**<0.001**			
Step 3							0.41	0.03	3.95**
Years of Service	-0.01	0.03	-0.02	[-0.07, 0.05]	-0.36	0.718			
PSQ-Op	0.07	0.32	0.01	[-0.56, 0.70]	0.22	0.830			
PSQ-Org	-0.33	0.36	-0.06	[-1.03, 0.37]	-0.94	0.349			
ACE-Q	-0.03	0.15	-0.01	[-0.32, 0.27]	-0.17	0.869			
MSPSS	**2.61**	**0.39**	**0.32**	**[1.84, 3.38]**	**6.68**	**<0.001**			
Job Satisfaction	**0.59**	**0.23**	**0.13**	**[0.15, 1.04]**	**2.64**	**0.009**			
SCS	**2.39**	**0.48**	**0.26**	**[1.46, 3.33]**	**5.03**	**<0.001**			
SGS	-0.18	0.51	-0.02	[-1.18, 0.81]	-0.36	0.718			
GMS	-0.08	0.12	-0.04	[-0.32, 0.17]	-0.63	0.530			
AMS	**-0.37**	**0.10**	**-0.21**	**[-0.56, -0.18]**	**-3.79**	**<0.001**			
WMS	0.09	0.05	0.10	[-0.01, 0.18]	1.76	0.079			
PTSP-Ben	-0.61	0.41	-0.07	[-1.40, 0.19]	-1.50	0.136			
SPP	0.05	0.06	0.05	[-0.06, 0.16]	0.92	0.359			
Step 4							0.42	0.01	9.31*
Years of Service	-0.01	0.03	-0.01	[-0.07, 0.05]	-0.32	0.749			
PSQ-Op	0.12	0.32	0.02	[-0.51, 0.74]	0.37	0.714			
PSQ-Org	-0.22	0.35	-0.04	[-0.92, 0.47]	-0.64	0.525			
ACE-Q	0.01	0.15	0.00	[-0.28, 0.30]	0.07	0.945			

MSPSS	**2.49**	**0.39**	**0.31**	**[1.72, 3.25]**	**6.40**	**<0.001**
Job Satisfaction	**0.61**	**0.22**	**0.13**	**[0.17, 1.04]**	**2.72**	**0.007**
SCS	**2.19**	**0.48**	**0.24**	**[1.26, 3.13]**	**4.61**	**<0.001**
SGS	-0.40	0.51	-0.04	[-1.39, 0.60]	-0.78	0.435
GMS	-0.09	0.12	-0.04	[-0.34, 0.15]	-0.76	0.445
AMS	**-0.31**	**0.10**	**-0.17**	**[-0.50, -0.11]**	**-3.12**	**0.002**
WMS	0.07	0.05	0.08	[-0.03, 0.17]	1.40	0.163
PTSP-Ben	-0.68	0.40	-0.08	[-1.47, 0.11]	-1.70	0.090
SPP	0.05	0.06	0.05	[-0.06, 0.16]	0.95	0.342
PTCI	**-1.05**	**0.35**	**-0.16**	**[-1.73, -0.37]**	**-3.05**	**0.002**

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

*$p < 0.05$ ** $p < 0.001$

Bold text denotes significant effect at $p < .05$.

Posttraumatic Growth

A four-step hierarchical regression model was analyzed with posttraumatic growth, based on total PTGI scores, as the dependent variable (see Table 20 for model results). In Step 1, the model with years of service, PCL-5, PSQ-Op, and PSQ-Org was not significant [$F(4,362) = 1.31$, $p = 0.264$].

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which was then significant [$F(8,358) = 7.47$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (12%) in posttraumatic growth scores [$\Delta F(4,358) = 13.44$, $p < 0.001$]. When added to the model, greater MSPSS ($B = 3.01$, $p < 0.001$) and SCS ($B = 4.47$, $p < 0.001$) were significantly associated with greater posttraumatic growth. Greater PCL-5 scores were also significantly associated with greater posttraumatic growth in this step ($B = 0.14$, $p < 0.001$).

In Step 3, the model continued to be significant [$F(14,352) = 4.65$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced but was not a significant improvement [$\Delta F(6,352) = 0.91$, $p = 0.488$]. PCL-5 ($B = 0.14$, $p < 0.001$), MSPSS ($B = 2.78$, $p < 0.001$), and SCS ($B = 4.18$, $p < 0.001$) continued to be significantly associated with posttraumatic growth, whereas none of the variables introduced in this step were significantly associated.

The addition of PTCI in Step 4 led to a significant [$F(15,351) = 4.40$, $p < 0.001$] but not improved model [$\Delta F(1,351) = 0.85$, $p = 0.357$], explaining no additional adjusted variance in posttraumatic growth. Controlling for all other independent variables in this final model, PCL-5 ($B = 0.13$, $p = 0.003$), MSPSS ($B = 2.85$, $p < 0.001$), and SCS ($B = 4.24$, $p < 0.001$) continued to be significantly associated with posttraumatic growth. When added to the model, PTCI was not significantly associated with posttraumatic growth when controlling for all other independent

variables. The final model accounted for 12% of the adjusted variance in posttraumatic growth, which was a small effect size.

Table 20

Hierarchical Regression Results for Posttraumatic Growth

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.00	0.00	1.31
Years of Service	-0.03	0.07	-0.02	[-0.15, 0.10]	-0.38	0.703			
PCL-5	0.03	0.04	0.04	[-0.05, 0.10]	0.66	0.508			
PSQ-Op	0.31	0.70	0.03	[-1.06, 1.68]	0.45	0.653			
PSQ-Org	0.63	0.71	0.06	[-0.77, 2.03]	0.89	0.375			
Step 2							0.12	0.12	13.44**
Years of Service	-0.01	0.06	-0.01	[-0.13, 0.12]	-0.09	0.925			
PCL-5	**0.14**	**0.04**	**0.23**	**[0.06, 0.22]**	**3.56**	**<0.001**			
PSQ-Op	1.08	0.66	0.12	[-0.22, 2.39]	1.64	0.103			
PSQ-Org	0.69	0.69	0.07	[-0.66, 2.04]	1.00	0.316			
ACE-Q	0.05	0.31	0.01	[-0.55, 0.66]	0.18	0.861			
MSPSS	**3.01**	**0.74**	**0.22**	**[1.55, 4.46]**	**4.07**	**<0.001**			
Job Satisfaction	0.34	0.41	0.04	[-0.47, 1.14]	0.82	0.411			
SCS	**4.47**	**0.93**	**0.29**	**[2.64, 6.29]**	**4.81**	**<0.001**			
Step 3							0.12	0.00	0.91
Years of Service	-0.02	0.06	-0.01	[-0.14, 0.11]	-0.24	0.813			
PCL-5	**0.14**	**0.04**	**0.23**	**[0.06, 0.23]**	**3.44**	**<0.001**			
PSQ-Op	1.02	0.68	0.11	[-0.31, 2.35]	1.52	0.131			
PSQ-Org	0.73	0.73	0.07	[-0.70, 2.15]	1.00	0.319			
ACE-Q	-0.01	0.31	0.00	[-0.62, 0.60]	-0.03	0.974			
MSPSS	**2.78**	**0.80**	**0.20**	**[1.21, 4.36]**	**3.48**	**<0.001**			
Job Satisfaction	0.06	0.46	0.01	**[2.20, 6.15]**	0.12	0.903			
SCS	**4.18**	**1.01**	**0.27**	[-0.85, 0.96]	**4.16**	**<0.001**			
SGS	1.16	1.04	0.06	[-0.88, 3.20]	1.12	0.264			
GMS	0.22	0.25	0.06	[-0.28, 0.72]	0.86	0.393			
AMS	0.17	0.20	0.06	[-0.22, 0.57]	0.86	0.389			
WMS	0.07	0.10	0.05	[-0.13, 0.27]	0.67	0.501			
PTSP-Ben	0.73	0.83	0.05	[-0.91, 2.37]	0.87	0.383			
SPP	0.10	0.12	0.05	[-0.13, 0.33]	0.82	0.411			
Step 4							0.12	0.00	0.85
Years of Service	-0.01	0.06	-0.01	[-0.14, 0.11]	-0.22	0.826			

PCL-5	**0.13**	**0.04**	**0.21**	**[0.04, 0.22]**	**2.98**	**0.003**
PSQ-Op	1.04	0.68	0.11	[-0.29, 2.37]	1.54	0.125
PSQ-Org	0.66	0.73	0.07	[-0.78, 2.09]	0.90	0.370
ACE-Q	-0.02	0.31	0.00	[-0.63, 0.60]	-0.05	0.957
MSPSS	**2.85**	**0.80**	**0.21**	**[1.27, 4.43]**	**3.54**	**<0.001**
Job Satisfaction	0.05	0.46	0.01	**[2.26, 6.22]**	0.11	0.913
SCS	**4.24**	**1.01**	**0.28**	[-0.86, 0.96]	**4.21**	**<0.001**
SGS	1.29	1.05	0.07	[-0.78, 3.35]	1.23	0.221
GMS	0.23	0.25	0.06	[-0.27, 0.73]	0.91	0.366
AMS	0.14	0.21	0.05	[-0.26, 0.55]	0.71	0.481
WMS	0.08	0.10	0.06	[-0.12, 0.28]	0.78	0.434
PTSP-Ben	0.75	0.84	0.06	[-0.89, 2.40]	0.90	0.367
SPP	0.10	0.12	0.05	[-0.13, 0.33]	0.84	0.402
PTCI	0.69	0.75	0.06	[-0.79, 2.17]	0.92	0.357

Notes. PCL-5, Posttraumatic Stress Disorder Checklist for the DSM-5; PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism; PTCI, Posttraumatic Cognitions Inventory-9 Item

*$p < 0.05$ ** $p < 0.001$

Bold text denotes significant effect at $p < 0.05$.

Post-Hoc Hierarchical Regression Findings for Posttraumatic Cognitions

A three-step hierarchical regression model was analyzed with posttraumatic cognitions, based on total PTCI scores, as the dependent variable (see Table 21 for model results). In Step 1, the model with years of service, PSQ-Op, and PSQ-Org accounted for 18% of the adjusted variance in burnout symptoms [$F(3,361) = 27.00$, $p < 0.001$]. Greater PSQ-Op ($B = 0.19$, $p < 0.001$) and PSQ-Org ($B = 0.21$, $p < 0.001$) were significantly associated with greater posttraumatic cognitions.

In Step 2, ACE-Q, MSPSS, job satisfaction, and SCS were added to the model, which continued to be significant [$F(7,357) = 27.14$, $p < 0.001$] and explained a significantly greater amount of adjusted variance (16%) in PTCI scores [$\Delta F(4,357) = 22.43$, $p < 0.001$]. When added to the model, greater MSPSS ($B = -0.25$, $p < 0.001$), Job Satisfaction ($B = -0.07$, $p = 0.019$), and SCS ($B = -0.35$, $p < 0.001$) were significantly associated with lessened posttraumatic cognitions. PSQ-Org ($B = 0.16$, $p = 0.002$) continued to be significantly associated with PTCI scores, whereas PSQ-Op was no longer significant.

In Step 3, the model continued to be significant [$F(13,351) = 11.10$, $p < 0.001$] when SGS, GMS, AMS, WMS, PTSP-Ben, and SPP were introduced and accounted for an additional 8% of the adjusted variance in PTCI scores, which was a significant improvement [$\Delta F(6,351) = 8.48$, $p < 0.001$]. MSPSS ($B = -0.14$, $p = 0.016$) and SCS ($B = -0.18$, $p = 0.012$) continued to be significantly associated with posttraumatic cognitions, whereas PSQ-Org and Job Satisfaction were no longer significant. When added to the model, lessened SGS ($B = -0.18$, $p = 0.016$), greater AMS ($B = 0.06$, $p < 0.001$), and lessened WMS ($B = -0.02$, $p = 0.009$) were significantly associated with greater posttraumatic cognitions. The final model accounted for 41% of the adjusted variance in PTCI scores, which was a large effect size.

Table 21

Hierarchical Regression Results for Posttraumatic Cognitions

Model	*B*	SE	*β*	95% CI	*t*	*p*	Adj *R2*	Δ*R2*	Δ*F*
Step 1							0.18	0.18	27.00**
Years of Service	0.00	0.01	0.04	[-0.01, 0.01]	0.75	0.456			
PSQ-Op	**0.19**	**0.05**	**0.24**	**[0.09, 0.29]**	**3.69**	**<0.001**			
PSQ-Org	**0.21**	**0.06**	**0.24**	**[0.10, 0.32]**	**3.73**	**<0.001**			
Step 2							0.33	0.16	22.43**
Years of Service	0.00	0.01	0.01	[-0.01, 0.01]	0.20	0.838			
PSQ-Op	0.06	0.05	0.07	[-0.04, 0.15]	1.21	0.228			
PSQ-Org	**0.16**	**0.05**	**0.18**	**[0.06, 0.26]**	**3.05**	**0.002**			
ACE-Q	0.04	0.02	0.07	[-0.01, 0.08]	1.63	0.104			
MSPSS	**-0.25**	**0.06**	**-0.21**	**[-0.36, -0.14]**	**-4.42**	**<0.001**			
Job Satisfaction	**-0.07**	**0.03**	**-0.11**	**[-0.13, -0.01]**	**-2.35**	**0.019**			
SCS	**-0.35**	**0.07**	**-0.27**	**[-0.48, -0.22]**	**-5.34**	**<0.001**			
Step 3							0.41	0.08	8.48**
Years of Service	0.00	0.00	0.02	[-0.01, 0.01]	0.46	0.645			
PSQ-Op	0.04	0.05	0.05	[-0.05, 0.13]	0.87	0.387			
PSQ-Org	0.09	0.05	0.10	[-0.01, 0.19]	1.75	0.081			
ACE-Q	0.03	0.02	0.06	[-0.01, 0.07]	1.40	0.162			
MSPSS	**-0.14**	**0.06**	**-0.12**	**[-0.25, -0.03]**	**-2.42**	**0.016**			
Job Satisfaction	0.00	0.03	-0.01	[-0.07, 0.06]	-0.11	0.915			
SCS	**-0.18**	**0.07**	**-0.13**	**[-0.31, -0.04]**	**-2.51**	**0.012**			
SGS	**-0.18**	**0.07**	**-0.11**	**[-0.33, -0.03]**	**-2.41**	**0.016**			
GMS	-0.01	0.02	-0.04	[-0.05, 0.02]	-0.78	0.434			
AMS	**0.06**	**0.01**	**0.21**	**[0.03, 0.08]**	**3.91**	**<0.001**			
WMS	**-0.02**	**0.01**	**-0.16**	**[-0.03, -0.01]**	**-2.61**	**0.009**			
PTSP-Ben	-0.06	0.06	-0.05	[-0.17, 0.06]	-0.94	0.350			
SPP	0.00	0.01	0.01	[-0.01, 0.02]	0.23	0.822			

Notes. PSQ-Op, Police Stress Questionnaire - Operational; PSQ-Org, Police Stress Questionnaire - Organizational; ACE-Q, Adverse Childhood Experiences Questionnaire; MSPSS, Multidimensional Scale of Perceived Social Support; SCS, Self-Compassion Scale - Short Form; SGS, Short Grit Scale; GMS, General Mattering Scale; AMS, Anti-Mattering Scale; WMS, Work Mattering Scale; PTSP-Ben, Public Trustworthiness Scale for Police - Benevolence; SPP, Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism

*$p < 0.05$ ** $p < 0.001$

Bold text denotes significant effect at $p < 0.05$.

Discussion

Given the extensive amount of data presented in this study, the following discussion of findings will focus on variables which 'rose to the top' in the hierarchical regression analyses, identified as particularly meaningful over and above other highly relevant psychosocial variables. To add to this dimensional investigation of symptom severity, I will also address significant findings between the probable and non-probable PTSD group, to reflect the current state of categorical diagnostic assessment. There will be a focus on clinically meaningful effect sizes, that is, differences and correlations in the moderate to strong range. At times, given the novelty of some of the investigated variables, I address findings with small effects as areas for future research and replication. Because of the large sample size leading to greater power in detecting statistical significance, I do not want to overstate findings which might not in fact be replicable.

To be discussed in greater depth below, it is notable that across the various trauma-related mental health outcomes, the variables of anti-mattering, self-compassion, and posttraumatic cognitions were identified most consistently as important psychosocial factors. The role of general mattering, job satisfaction, grit, perceived benevolence, socially prescribed perfectionism, and social support were also implicated in specific outcomes.

Trauma and Psychological Distress in Policing

Trauma exposure in the sample—12.74 categories of exposure—is slightly higher but in general reflective of other studies completed in the Canadian context which identified an average of 11.08 categories of exposure (Carleton et al., 2019). What is critical is that every single officer in the study endorsed at least one event meeting PTSD criterion A in the DSM-5 (APA, 2013),

similar to other work looking at trauma exposure among Canadian police officers (e.g., Horswill et al., 2021). While there is a lack of data here reflecting the frequency of such exposure, the heterogeneity of potentially traumatic events that these Canadian municipal and provincial police officers are exposed to far surpasses what is experienced by the civilian population (Kilpatrick et al., 2013).

When an individual becomes a police officer and puts on their Kevlar vest, they no doubt hold an understanding of what they signed up for. They likely recognize that they will be exposed to the darkest parts of humanity; in fact, the vast majority of the sample—*upwards of 98%*-—have at some point been exposed to severe human suffering, violent death, and sexual and physical assaults. In addition, almost half the sample identified having to cause serious injury or death to another person. Even though these officers start every shift knowing they may come face-to-face with the perils of their job, whether it be as a witness or perhaps even as a perpetrator of harm themselves—despite recognizing their actions may have been necessary to protect the safety of themselves, their fellow officers, and the public—these moments can leave lasting psychological imprints. In fact, the current study identified that 27.0% of the sample met probable criteria for PTSD, 21.0% exhibited clinically elevated generalized anxiety, and 22.6% exhibited clinically elevated depression, which seems to reflect a kind of walking wounded, which is not visibly apparent but is nevertheless striking. The rates of these mental health outcomes are greater than observed in the civilian population (Statistics Canada, 2024b; Stephenson, 2023), slightly elevated in comparison to some work among Canadian municipal and provincial officers (Carleton et al., 2018), are similar to studies looking at rates found among RCMP personnel (Horswill et al, 2021), and are generally in line with the broader literature on police mental health and well-being (e.g., Afifi et al., 2009; Asmundson & Stapleton, 2008).

Connection between Trauma-Related Mental Health Outcomes

From a symptom severity perspective, each of the trauma-related mental health outcomes in this study, including PTSD, MI emotional sequelae, MI perpetrations, MI betrayals, depression, anxiety, burnout, and satisfaction with life were significantly associated with each other in the expected directions. That is, greater endorsement of symptoms in each domain were associated with greater symptoms elsewhere, and with lessened satisfaction with life. Where almost all these correlations were moderate to strong, the correlations were small in looking at MI perpetrations and betrayals, establishing MI as a more distinct and unique mental health condition (Roth et al., 2022a).

Not surprisingly, those with probable PTSD endorsed greater symptoms of depression, anxiety, burnout, and lower satisfaction with life, which were all strong effects. They also endorsed heightened MI emotional sequelae, perpetrations, and betrayals. The close connection between PTSD and these other mental health outcomes has been identified to different extents within the literature surrounding police mental health and well-being (e.g., Carleton et al., 2019; Horswill et al., 2021). These findings amongst the literature undoubtedly support the notion that trauma exposure is a transdiagnostic risk factor. In this dissertation project, measures were selected based on sound psychometric properties of reliability and validity, many of which are deemed to be gold-standard self-report measures (e.g., Kroenke et al., 2001; Spitzer et al., 2006; Weathers et al., 2013b). Having highly correlated measures of clinical symptoms, and construct overlap, is a function of the transdiagnostic nature of the categorical framework that is the DSM-5 (e.g., Newson et al., 2021).

With a positive psychology focus, posttraumatic growth was also associated with greater MI betrayals, MI perpetrations, and satisfaction with life; although these were small effects, they have not been studied elsewhere and so should be investigated in future research. Interestingly, there were similar posttraumatic growth scores across groups despite findings in the literature of the positive associations between PTSD and posttraumatic growth among Canadian and American police officers (Chopko, 2010; Horswill et al., 2021). To muddy the waters even further, when controlling for other variables in the study, PTSD symptoms were predictive of posttraumatic growth in line with this previous work. Although these studies suggest PTSD symptoms are related to posttraumatic growth, they also find that trauma-related symptoms may not be necessary, where simply being exposed to potentially traumatic events can lead to posttraumatic growth as well (Chopko, 2010; Horswill et al., 2021). Conceptually, researchers emphasize the importance of cognitively engaging with making sense of the potentially traumatic event and making sense of the meaning of the event in one's life (Tedeschi & Calhoun, 2004; Kashdan & Kane, 2011). Notably, the scale developers also focused more heavily on trauma exposure than PTSD symptomology (Tedeschi & Calhoun, 1996). These somewhat muddied findings might reflect that PTSD and posttraumatic growth are not equivalent, and it is unlikely that the experience of PTSD is a necessary step on the road to posttraumatic growth; I humbly suggest there may even be a protective function for those exposed to trauma who effectively make meaning and bypass PTSD towards posttraumatic growth.

Socio-demographic Risk & Resiliency Factors

In comparing those with probable PTSD and non-probable PTSD, there were no significant differences identified on any of the socio-demographic variables, including rank, age, race, gender identity, nor sexual orientation. These findings surrounding a lack of difference in

PTSD symptoms between men and women is in line with previous police research (Horswill et al., 2021; Ménard & Arter, 2014). This serves as an important foundation, from which to critically examine how psychosocial variables impact PTSD and other trauma-related outcomes, given that these pre-dispositional variables lacked meaning in this context. These non-findings are considered to be positive clinically, given that the psychosocial variables to follow are dynamic and amenable to change.

Years of Service & Trauma Exposure

When controlling for the variance of other variables, years of service significantly predicted PTSD symptom severity, similar to other findings among RCMP officers (Horswill et al., 2021), though none of the other mental health outcomes. Years of service also did not distinguish those with categorical probable PTSD and non-probable PTSD. As one progresses further into their career, it is reasonable to assume that trauma exposure would naturally accumulate, which in itself serves as a risk factor for PTSD (Kilpatrick et al., 2013). In fact, those with probable PTSD endorsed greater trauma exposure, and greater trauma exposure on the in their personal lives and as a witness, in particular. How one's own personal experience of trauma intersects with on-the-job exposure may be influential in leading to PTSD, as well as the impact of having to serve as a witness and be unable to act.

Alongside years of service not robustly predicting symptom severity across mental health outcomes, there were some small (and so cautious) associations between years of service with decreased operational and organizational stress, along with increased job satisfaction and perceived public benevolence. Some explanations for these findings in conjunction with each other could be that officers who "stick it out" for longer careers are the ones with greater positive

experiences in policing. Another possible explanation is that with years of service often comes promotion in rank and changes in responsibilities; perhaps as officers progress into more senior administrative and supervisory positions, they are less involved in the frontlines of policing which leads to improvements in their levels of stress and job satisfaction.

Connection between Psychosocial Risk & Resiliency Factors

Operational and organizational stress appear to be influenced by the other psychosocial variables in the study, in particular, we see negative moderate effects with self-compassion, perceived public benevolence, and increased anti-mattering, socially prescribed perfectionism and posttraumatic cognitions. Organizational stress was also moderately related to reduced job satisfaction and work mattering, with operational stress moderately related to lessened grit. It is important to consider the interplay between operational and organizational stress and potential negative impact on one's job satisfaction, the degree to which they feel like they matter, how they think, and how compassionate or critical their inner dialogue is.

Theoretical explanations for the impacts of ACEs on subsequent trauma exposure described in the introduction are further supported by the connection between ACEs and greater anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions, as well as lessened social support and self-compassion, though these were all small effects. Specifically, re-activated negative core beliefs about the self are observed in the anti-mattering, posttraumatic cognitions, and self-compassion findings (Battaglia et al., 2019). Those with greater ACEs appear more sensitive to the expectations of others, which relates to the socially prescribed perfectionism findings. They may also lack social support given the nature of their childhood

trauma or their means of coping is to push others away because of their negative beliefs about themselves.

Social support and self-compassion were moderately positively connected, and each related to heightened mattering, work mattering, perceived benevolence, as well as lessened anti-mattering, socially prescribed perfectionism, and posttraumatic cognitions. Self-compassion was further related to greater grit. This is suggestive of a dynamic of more positive and compassionate self-talk in the context of supportive others facilitating more positive beliefs about the self and feelings of worth in the aftermath of trauma exposure.

General and work mattering were strongly positively associated with each other as well as perceived benevolence, and negatively related to anti-mattering and posttraumatic cognitions. Work mattering was further moderately related to job satisfaction. This is understandable given that one might place greater meaning in their work when they feel as though they matter to others, their colleagues and those they serve, and when they believe those they serve are well intentioned and caring of their well-being. Positive appraisals of the value of their work might facilitate more adaptive cognitions regarding traumatic events.

Anti-mattering was associated with lower perceived benevolence and greater posttraumatic cognitions and socially prescribed perfectionism. Beliefs about not mattering are seen here as developing in the context of others; the weight of perceived perfectionistic expectations of others and lessened views of the public as benevolent might shape a negative internal self-schema. This is juxtaposed with an internalized drive to continue in the face of adversity alongside more positive views of those they serve and their expectations fostering more positive appraisals of the traumatic event. This is observed in greater grit and perceived

benevolence, along with lower socially prescribed perfectionism being related to lower posttraumatic cognitions.

The 'Big 3' Psychosocial Risk & Resiliency Factors

Posttraumatic Cognitions

Posttraumatic cognitions were a unique variable in this study, given that alterations in cognitions is included within the diagnostic framework of PTSD, and to some extent, depression (APA, 2013). However, posttraumatic cognitions are just one aspect of the complex and often heterogeneous diagnostic profile of PTSD. In fact, I noted that the correlations between posttraumatic cognitions with PTSD and depression were not so large as to think the same constructs were being measured. Within the heterogeneity of PTSD, maladaptive cognitions and appraisals of oneself, the world, and self-blame have been implicated as incredibly important in the development, maintenance, and as mechanisms of change in the treatment of PTSD (e.g., Ehlers & Clark, 2000; Schumm et al., 2014; Wells et al., 2019). In line with this backdrop, in the current study we see that the negative beliefs officers hold about themselves, the world, and the blame they place upon themselves in the aftermath of traumatic events is highly predictive of negative mental health outcomes. In fact, posttraumatic cognitions were a robust predictor of greater severity of PTSD, depression, and anxiety, which has been observed among military veterans and other PSP, but now for the first time among police officers (Michael et al., 2016; Setlack et al., 2021; Sexton et al., 2018). Novel findings also include that posttraumatic cognitions were predictive of greater severity of MI emotional sequelae and perpetrations, burnout, and poorer life satisfaction, when accounting for shared variance across the other psychosocial variables.

To account for the connectedness of PTSD and posttraumatic cognitions, I decided to consider the statistical significance of other predictor variables prior to the addition of posttraumatic cognitions. When entered as the sole variable in the final step of the regression equations it provided a significant increase in the adjusted explanatory variance for each of the mental health outcomes it significantly predicted, including PTSD, MI emotional sequelae and perpetrations, depression, anxiety, burnout, and satisfaction with life. It accounted for upwards of 5% of the variance in these mental health outcomes, which is quite remarkable for a single variable entered after a multitude of other psychosocial variables have been already considered in the regression equation.

Looking to the subscales of posttraumatic cognitions, among those screening positive for probable PTSD, they held significantly greater overall posttraumatic cognitions, as well as greater negative beliefs about themselves, the world, and self-blame, all to a clinically meaningful degree. Looking to the theoretical perspectives on posttraumatic cognitions, rigidity in thinking surrounding one's views about themselves and the world, and the avoidance that this fosters, is believed to make it more difficult to incorporate the traumatic event into their pre-existing schemas (Ehlers & Clark, 2000; Foa & Rothbaum, 1998).

Further, I decided it was important post-hoc to also consider what variables predict posttraumatic cognitions given its relevance within the clinical context and the onset and maintenance of PTSD and other mental health outcomes as identified above. Notably, greater anti-mattering alongside lower social support, self-compassion, grit, and work mattering significantly predicted greater posttraumatic cognitions, accounting for the other psychosocial variables. These findings are novel within the police literature. In sum, there appears to be an inter-connectedness between cognitions related to self-blame and those beliefs one holds about

themselves and the world, with the degree to which they feel like they matter, the kindness they show themselves, their perseverance in the face of hardship, and the degree to which others are viewed as supportive. If someone views themselves as less significant and feels that others are not supportive, they may be more likely to have a global view of themselves which is self-critical and self-effacing, ultimately leading to increased self-blame and feelings of lower self-worth in the aftermath of trauma. The impact of one's sense of self in persevering in the face of trauma exposure is highly relevant here, with a poorer sense of self shaping more negative outcomes.

Anti-Mattering

Looking to the mattering variables, anti-mattering stood out remarkably as the most predictive facet, where it was significantly associated with greater severity of depression, anxiety, and worsened life satisfaction, extended from civilian and healthcare samples (Flett, Nepon, et al., 2022; Giangrasso et al., 2022). It was further predictive of heightened PTSD severity, advancing previous research associating anti-mattering with increased trauma exposure and decreased psychological well-being in a community sample (Bdier et al., 2025). Anti-mattering was also predictive of increased MI emotional sequelae and MI betrayals, and burnout symptoms which has yet to be studied. Among those with probable PTSD, anti-mattering was observed to be higher to a clinically significant degree.

Given the moderate to strong correlations between the constellation of mattering facets here, these findings suggest that when accounting for underlying similarity, there are highly unique components to anti-mattering where it serves as a robust risk factor across many negative trauma-related mental health outcomes, including PTSD, depression, anxiety, burnout, worsened life satisfaction, and MI emotional sequelae and betrayals. The degree to which one feels like

they do not matter and are invisible appears incredibly damaging in the aftermath of trauma exposure, which has been posited theoretically (Flett, Nepon, et al., 2022). Notably, these feelings of not mattering coincide with the violations of one's internal moral code through betrayals at the hands of the institution, superiors, and colleagues that one serves.

For those police officers who have a high level of anti-mattering, it could be seen as an indicator of failing to make a valued difference. After becoming invested in a role dedicated to protecting the public, not feeling valued by others might be an especially painful experience, leading one to question the meaning of the self-sacrificing service which was considered to be at the heart of their career. The feelings that accompany anti-mattering are probably very salient and painful but in turn likely kept to oneself; this internalization and fostering of avoidance may facilitate further psychological distress following exposure to trauma (Ehlers & Clark, 2000). In fact, previous research supports that anti-mattering is closely related to decreased self-worth and heightened feelings of shame and hopelessness which are known to contribute to avoidance (Deas et al., 2023; Flett, Nepon, et al., 2022; Giangrasso et al., 2022). Feelings of anti-mattering may interact synergistically with experiences of MI betrayals, which facilitate MI distress through validating one's sense of insignificance. For those who feel they do not matter to the people around them, at their core they may feel a sense of self that is fundamentally flawed, fueling meaning making surrounding trauma and morally injurious events that is negative and self-focused, observed in the close connection between anti-mattering and posttraumatic cognitions.

Self-Compassion

Another well-studied variable in the risk and resilience literature is self-compassion. In the current study, self-compassion appeared to provide the greatest resilience in connection to the studied trauma-related outcomes. Over and above the other variables, self-compassion was predictive of less depression and anxiety symptoms (prior to the addition of posttraumatic cognitions), replicating findings from Canadian police officers (Fleischmann et al., 2021), along with lessened PTSD and burnout, and greater life satisfaction and posttraumatic growth, which extends findings from international PSP to this Canadian sample (e.g., Harnett et al., 2013; Kaplan et al., 2020). In support of these results was a strong clinically significant finding of lessened self-compassion observed among those with probable PTSD. A novel finding here includes the predictive capacity of self-compassion with MI emotional sequelae. This is the first study to offer quantitative support for the relation between self-compassion and facets of MI among police officers, which has only been described qualitatively (Smith-MacDonald et al., 2021).

Self-compassion is often mistaken as a washing oneself with platitudes and excuses, of moving quickly past our faults and the mistakes we have made by letting ourselves off the hook (Neff, 2003). However, the true basis of self-compassion is an approach-oriented mindset to suffering, where we approach our suffering knowing that we will hold our mistakes with an eye to human imperfection, keeping unfair criticisms at bay (Neff, 2003). Self-compassion helps an individual overcome problematic avoidance which hinders the resolution of PTSD and other trauma responses (Ehlers & Clark, 2000). The goal is to reduce suffering by utilizing kindness towards the self (Neff, 2003). Self-compassion likely helps to shift the beliefs one holds toward the traumatic event including reducing unrealistic self-blame, noted in self-compassion's

connection with lessened posttraumatic cognitions described above. It further helps to change one's inner dialogue away from self-criticism and self-hate towards a recognition of the universality of suffering and with kindness towards one pain (Neff, 2003). This moving away from self-blame and criticism towards a kinder view and recognition of the universality of suffering might foster existential pondering and ultimately posttraumatic growth.

Workplace Social Factors

Operational & Organizational Stress

Over and above the other psychosocial variables, the level of stress faced by officers in the field and within the organization were both found to predict greater MI emotional sequelae, with organizational stress uniquely predictive of MI betrayals, which are novel findings. The connection between MI betrayals and organizational stressors is understandable given that morally injurious betrayals often occur at the hands of the institution, superiors, and colleagues (Roth et al., 2022a). While organizational and operational stress were both heightened among those with probable PTSD (with clinically significant effects), operational stress, in particular, was a robust positive predictor of PTSD severity, anxiety, and burnout. These are akin to some previous findings in the literature, though observed for the first time in Canadian policing (Anders et al., 2022; Sherwood et al., 2019).

Given the strong correlation between operational and organizational stress, it appears that when accounting for shared variance, operational stress provided more unique explanatory power. Perhaps the daily stressors of being in the line of duty, moreso than the administrative stressors, relates more heavily to poor mental health functioning. Speculatively, operational stress may be more closely tied to hypervigilance and fears of re-traumatization, which is

reflected in heightened PTSD and anxiety symptoms; in fact, operational stress was more strongly correlated with this domain of PTSD in comparison to administrative stressors. This state of heightened fight or flight is both physically and emotionally draining, which may contribute to burnout. In general, and most obviously, what we consider as 'stress' are acute moments of intense trauma, yet what is more nuanced, is to reflect upon the impact of the daily stressors an officer faces in the field and in their organization, alongside feelings of lack of support within their department as negatively impacting their mental health and well-being.

Job Satisfaction

The degree to which one is satisfied with their job provided unique explanatory variance for greater life satisfaction and lessened depression and burnout, which has been observed among Canadian police officers and international PSP more generally (Kohan & O'Connor, 2002; Thielmann et al., 2022) and follows that job satisfaction may be more important for depression than anxiety among police officers (Nelson & Smith, 2016). It was also identified that those in the probable PTSD group were less satisfied with their work, though this was a small effect (Bonumwezi et al., 2022; Bourke & Craun, 2014; Choi & Song, 2018). Job satisfaction further uniquely predicted MI betrayals, understandably given that MI betrayals reflects individual moral distress through betrayals by a colleague, superior, or organization (Roth et al., 2022a).

One's work is often central to their identity, especially within the culture of policing with its strong ethos and a blurred line for what it truly means to be off-duty. Given the amount of training, time, and sacrifice that it takes to become a police officer, when one is dissatisfied with their career, it can extend to a dissatisfaction with who they are as a person. Experiences of morally injurious betrayals are complex given the interconnectedness of work and identity here,

where these betrayals are closely tied to poorer job satisfaction but also satisfaction with one's sense of self, which might further heighten the level of distress. Thus, job satisfaction is not to be taken lightly as an explanatory variable here. These findings extend our understanding of the connection between job satisfaction with PTSD, MI, depression, burnout and life satisfaction among Canadian police officers.

Public Trustworthiness – Benevolence

Prior to the current investigation, the relation between public trustworthiness – benevolence and trauma-related mental health outcomes had not been studied. Again, this is defined as the degree to which police officers believe the public are well intentioned and concerned with the welfare of police officers (Mourtgos et al., 2020). Perceptions of the public as more benevolent predicted significantly less PTSD symptoms (prior to the addition of posttraumatic cognitions) and MI betrayals over and above the other risk and resiliency variables, and those in the probable PTSD group had significantly worsened perceptions of the public as benevolent, to a moderate and clinically meaningful degree.

In general, although evidence suggests that when police perceive the public as benevolent, they engage in more proactive policing ultimately placing themselves in harm's way (Mourtgos et al., 2020), this factor appears to buffer against the negative impact of PTSD. It is possible that when the relationship between the public and oneself is perceived more positively—that the public is well intentioned and cares about their well-being—it may lead to perceptions that what one faced was worthwhile. Beliefs surrounding the meaning of trauma are incredibly important (e.g., Foa & Rothbaum, 1998) and when an officer comes to believe that facing such a horrifying event was perceived to be unappreciated it could perhaps lead to sense

of futility in their calling to sacrifice their own well-being for others. It might foster meaning to know that one helped somebody they perceived as a caring and deserving other, that they respect the work that they do and their willingness to put their life on the line for them. This further extends to buffering against the negative effects of MI betrayals, and the potential belief that while the department or one's colleagues might not have their back, the public they serve does.

Interpersonal Social Factors

Adverse Childhood Experiences

In line with previous research among American and Canadian police officers, ACEs stood out as uniquely predictive of symptom severity for PTSD, MI emotional sequelae, and MI perpetrations (e.g., Horswill et al., 2021; Roth et al., 2022b). Findings also suggest that ACEs were significantly greater amongst those with probable PTSD, though not clinically significant in effect size. Unlike Horswill and colleagues (2021), ACEs were not predictive of posttraumatic growth. This lack of replication could be due to the sample mean of 1.49 on the ACE-Q, which is quite low within the Canadian and American police mental health literature (e.g., 4 to 5.8; Horswill et al., 2021, Roth et al., 2022b) and comparatively to Canadian military personnel and veterans (e.g., 3.0; Battaglia et al., 2019).

Despite the low sample mean on the ACE-Q, when accounting for shared variance amongst the psychosocial risk and resiliency factors, there remained robust associations between ACEs and PTSD, MI emotional sequelae, and MI perpetrations. This reflects the theorized underpinning of the relationship between ACEs and trauma. Specifically, that ACEs relate to PTSD and MI because of impaired recovery (Iversen et al., 2007; Sareen et al., 2013) as well as reactivating negative core beliefs about the self which were internalized during experiences of

childhood trauma (Battaglia et al., 2019). In this work, we did not find childhood adversity to serve a protective function against the experience of trauma, which has been suggested elsewhere (Seery, 2011).

Social Support

Following prior research evidencing social support as a robust resilience factor against the effects of trauma among police officers in mainly international samples, in the current study we identified that perceived social support was predictive of lessened depressive symptoms and greater satisfaction with life among Canadian police officers, when controlling for other important psychosocial variables (Prati & Peitrantoni, 2010; Sherwood et al., 2019). The current sample had a high degree of perceived social support, which might reflect why it was not implicated in the other trauma-related outcomes. Even though there was a high degree of perceived social support across the entire sample, it was also predictive of heightened posttraumatic growth, extending findings from international police samples (Harnett et al., 2023; Leppma et al., 2016). Less social support was also observed to a clinically significant degree among those with probable PTSD.

Social support is believed to foster resilience and posttraumatic growth through providing an opportunity to reappraise the traumatic event with caring and important others (social buffering hypothesis) (Cohen & Wills, 1985; Calhoun & Tedeschi, 2006). As mentioned above, social support does appear to shape the beliefs one holds about themselves, the world, and the meaning they make out of trauma experiences which helps foster posttraumatic growth. In 2023, the U.S. Surgeon General acknowledged an “epidemic of loneliness” with cascading negative effects on well-being (OSG, 2023). Feeling well socially supported might broaden one’s

engagement in life and activity outside of the work context. This is vital in shaping an identity which is not dominated by the profession, which might underpin the relation between social support and improved life satisfaction and lessened depressive symptoms. Within a long line of research, this further solidifies social support as a robust resilience factor following trauma exposure.

Other Personality & Self Factors

Grit

Accounting for shared variance amongst the other psychosocial variables, grit was a significant predictor of lessened depression and anxiety, which has not yet been identified among police officers. Those with probable PTSD also demonstrated lower levels of grit to a clinically significant degree, with associations to PTSD noted in work with EMS personnel (Musso et al., 2019). These findings connect with underlying mechanisms by which grit is posited to bolster resiliency, in particular, through fostering meaning in life (Kleiman et al., 2013), as well as fostering a persistence towards the goal of recovery despite challenges and possible setbacks (Griffin et al., 2016). Grit has been related to active coping and lessened disengagement (Musso et al., 2019) where grit may be particularly useful in buffering against the effects of depression and anxiety through behavioural exposure which leads to positive mood activation and challenging one's anxious predictions and tendency to catastrophize. It is interesting that while grit on its own was greater in the non-probable PTSD group, in combination with other psychosocial factors it was not predictive of lessened PTSD severity. I wonder if when the positive aspects of grit are well captured by other variables, if there is a 'dark side.' I tentatively question the degree to which grit might also characterize a personality style of persevering at all

costs and a mentality of "push through and move on." While that works well in the context of depression and anxiety, with trauma there is a need to pause and process. An emphasis on pushing through could be viewed as engaging in cognitive avoidance, a contributor to the maintenance of PTSD (Ehlers & Clark, 2000). The findings of the current study do not offer evidence to support this claim, but there might be value in considering this explanation in the context of future work.

Mattering & Work Mattering

Over and above the other psychosocial variables, mattering was predictive of lessened burnout symptoms. Among those with probable PTSD, mattering was observed to be lower to a clinically significant degree. The connection between mattering with PTSD and burnout is extended from civilian and healthcare samples (see Flett, 2022 for review; Bdier et al., 2025; Hamby et al., 2025). It further extends research findings of mattering with lessened PTSD symptoms among American police officers and forensic examiners (Mitchell et al., 2024). Having an internalized sense of self that is valued by others and society is protective when invested in making a difference in a high-risk role such as policing. Where anti-mattering might cause someone to internalize traumatic events through self-blame and shame as described above, mattering might drive someone to look outward towards supportive others, having their sense of worth validated in the eyes of others; this is observed through the connection of mattering with heightened social support. Work mattering did not significantly predict any of the trauma-related mental health outcomes in the study over and above the other psychosocial variables, and it was lower but not to a clinically significant degree among those with probable PTSD. It is possible that the meaningful aspects of the global mattering construct were better captured in this sample through anti-mattering and general mattering.

Socially Prescribed Perfectionism

The internalized pressures and demands of perfectionism an officer perceives from others, the institution they serve, and society at large were significantly predictive of MI emotional sequelae and MI perpetrations when accounting for other variables. The association with MI perpetrations is well understood in the context of previous work which highlights the negative sequalae of socially prescribed perfectionism including defeat and hopelessness in the face of reminders of failing to live up to unrealistic expectations and prescribed standards (Cramer et al., 2019; Flett, Hewitt, et al., 2022; Flett et al., 2014). Socially prescribed perfectionism has been linked to an unmet need of competence, weighing down one's perceptions of their moral failings, and fueling negative MI emotions (Jowett et al., 2016). Previously, socially prescribed perfectionism has been found to reduce distress tolerance, described as a "stress-threshold lowering effect" (O'Connor et al., 2010). This is observed through those with probable PTSD holding heightened levels of socially prescribed perfectionism, to a clinically significant degree.

Risk and Resilience Model Variance and Summary

We utilized adjusted R^2 to account for multiple variables being added and improving the model purely by chance. For each mental health outcome, when additional variables were added, the amount of variance explained either increased or stayed the same but did not decrease, which suggests the terms improved the model to a greater degree than what would be expected by chance. The initial control variables of years of service and operational and organizational police stress—and PTSD severity for posttraumatic growth—explained anywhere from 0% of the variance scores for posttraumatic growth to 33% for burnout. The addition of ACEs, social

support, job satisfaction, and self-compassion explained an additional 4% (MI perpetrations) to 30% (satisfaction with life), which were small to large effects. Moderate effects were observed for PTSD, depression, anxiety, burnout, and MI emotional sequelae. When grit, mattering, anti-mattering, work mattering, perceived public benevolence, and socially prescribed perfectionism were added to the models they explained a further 0% (MI perpetrations) to 9% (depression) of the variance, which were negligible to small effects. Small effects were observed for PTSD, anxiety, burnout, satisfaction with life, MI emotional sequelae, and MI betrayals. However, small effects are quite notable further along in the regression equations, given that most of the variance will have already been accounted for, suggesting that these novel variables are highly relevant in the context of trauma. As mentioned above, the final step with posttraumatic cognitions added as the sole variable led to upwards of a 5% (MI emotional sequelae & PTSD) further variance explained, with small effects observed also for depression and anxiety.

It appears that the psychosocial variables selected for inclusion in the project, taken together, are quite important in the context of trauma-related mental health outcomes among police officers. In fact, the selected variables explained anywhere from 12% to 66% of the variance in these outcomes. The selected risk and resiliency variables seemed less relevant in the context of MI perpetrations and posttraumatic growth compared to the other outcomes of PTSD, MI emotional sequelae and betrayals, depression, anxiety, burnout and satisfaction with life, where large effects were observed. From a statistical lens, the overall variance explained was in a good range, where there was enough room left over for error and to be confident that what we were measuring as inputs (risk and resiliency factors) were not the same as the mental health outcomes.

In summary, years of service was predictive of PTSD severity. Operational and organizational stress predicted MI emotional sequelae; with operational stress predictive of PTSD, anxiety, and burnout; and organizational stress predictive of MI betrayals. Self-compassion, anti-mattering, and posttraumatic cognitions were a trio of variables that were robust predictors of both the negative and positive mental health outcomes in this study. Together they were each predictive of PTSD, MI emotional sequelae, depression, anxiety, burnout and life satisfaction. Posttraumatic cognitions were further predictive of MI perpetrations, with anti-mattering predictive of MI betrayals, and self-compassion predictive of posttraumatic growth. Anti-mattering and self-compassion also predicted posttraumatic cognitions.

Early experiences of ACEs and socially prescribed perfectionism were predictive of MI emotional sequelae and perpetrations, with ACEs also predictive of PTSD. Perceived benevolence was relevant in the context of PTSD and MI betrayals. Job satisfaction and social support helped explain depression, life satisfaction, with social support implicated in posttraumatic cognitions and posttraumatic growth, where job satisfaction was also relevant with MI betrayals. Grit and work mattering were noted as predictive of posttraumatic cognitions, with grit also explaining variance in depression and anxiety. Finally, mattering was predictive of burnout.

Clinical Implications

With respect to the individual variable-focused approach in describing the findings above, it must not be lost that there is a need for a person-focused perspective. Each police officer seen in a clinical context will hold a unique profile of the psychosocial factors studied

here and will fall at varying degrees on each psychosocial factor. Based on the findings of this dissertation project, the police officer characterized by multiple factors should likely be struggling with heightened psychological distress.

Across the various trauma-related mental health outcomes, the variables of anti-mattering, self-compassion, and posttraumatic cognitions were identified most consistently as important psychosocial factors, with work mattering, job satisfaction, grit, perceived benevolence, socially prescribed perfectionism, and social support also identified at times. These psychosocial factors are not as disparate as they might appear on the surface, and there are some negative implications to their connectedness centred around the idea of policing as part of one's identity. When someone becomes a police officer, akin to joining the military, it is not just a job. The transition into service in some ways fundamentally changes one's identity and becomes engrained in their personality and who they are as a person. With such a strong culture and ethos within the call to policing, it can come to shape one's belief systems and views of the world.

Widespread recent socio-political events including a rise of the "defund the police" movement and growing negative public sentiments towards officers may be having a damaging impact on police mental health, because it not only challenges the profession, but also the personal identity of these officers. There appears to be an inter-connectedness between the self-blame and cognitions officers hold about themselves and the world, with the degree to which they feel like they matter, the kindness they show themselves, the weight of the expectations of others, and the degree to which those others are viewed as supportive, well-intentioned, and caring. For those who are struggling, they are struggling under the weight of incredibly high societal expectations, while at the same time trying to meet these expectations and putting themselves in harm's way for others who they perceive to not care about them. In the face of

this, there are deep-rooted feelings of being cast aside, of feeling like they do not matter and are invisible. These moments where they perhaps risked their lives or witnessed psychologically scarring events have shaped the negative beliefs they hold about themselves and the world, and they blame themselves for not doing enough. This drives a sense of hopelessness and futility in the face of one's suffering, and this internalized negativity is juxtaposed with challenges of holding kindness towards oneself. In particular, in the face of perceived moral failings, we are seeing a damning weight of the recognition of not living up to the standards of the public and potentially reactivating negative core beliefs about the self, developed through childhood adversity in the form of negative posttraumatic cognitions.

At its core, an officer's sense of self is constantly challenged in the ways they are called to act in morally ambiguous and critical situations, and the horrific moments where they are called to stand witness. Through the constellation of posttraumatic cognitions, anti-mattering, and self-compassion—all holding unique roles within trauma and poor mental health—arises a sense of self and identity which is fractured. These core factors reflect self-criticism, self-blame, low self-worth, low self-esteem, low self-efficacy, feelings of invisibility, hopelessness, and of being defective (e.g., Ehlers & Clark, 2000; Flett, Nepon, et al., 2022; Neff, 2003). They reflect an internalized sense of core shame.

Psychotherapeutic Approaches

What we might come to think of as underpinning these feelings of being defective or invisible, is a core emotion of shame. Where guilt is held regarding one's actions or inactions, and motivates us to repair, shame is internalized as reflecting one's identity as fundamentally flawed, unworthy, or unlovable, and motivates us to pull away from those around us (Greenberg

& Iwakabe, 2011). Shame-fueled avoidance comes in many forms, for example: isolating oneself, pushing away emotions and memories, always staying busy, excessive work hours, doom-scrolling, pornography, alcohol, drugs, sex, gambling, and procrastination. This avoidance only serves to perpetuate feelings of shame and overarching distress. Integrating components of emotion and compassion-focussed psychotherapy approaches, an antidote to shame is bringing it to light in the presence of a caring other, and in this case, addressing the unmet need of being accepted for who you are (e.g., Gilbert, 2010; Greenberg & Iwakabe, 2011; Brown, 2022). The ability to hold one's shame lightly and embrace one's true self within the context of psychotherapy—or with a caring friend or family member—can actively change the experience of shame, which thrives when hidden in darkness (Brown, 2022). Self-compassion fosters an approach mindset to suffering, tackling the avoidance of trauma which is so common in PTSD, particularly when the trauma is re-shaming. There is a goal to approach one's suffering with a sense of common humanity—that suffering is a fundamental human experience—and with kindness towards the self and one's suffering (Neff, 2023). Emotion-focused therapy involves changing emotion with emotion, that by working through shame we can access grief, sadness, adaptive anger, and compassion towards the self in light of the traumatic experience (Greenberg & Iwakabe, 2011).

Self-compassion approaches do not come without hesitation and resistance from many, especially when considering the cultures of public safety and military populations, which are built on foundations of perceived mental and physical toughness. There are beliefs which consider that to provide compassion to oneself would be weak, or letting oneself off the hook, that it is selfish, and will reduce motivation (Neff, 2023). These meta-cognitive beliefs which serve as barriers to engaging in compassion work are fundamentally flawed, when in reality the

vast literature on self-compassion has evidenced improvements in psychological resilience, greater health and well-being, facilitating positive interpersonal relationships, and enhancing motivation (Neff, 2023). While individuals can often so easily align with self-criticism, it can be difficult for people to imagine demonstrating compassion and kindness to themselves, and so can be facilitated by using a compassionate other (Gilbert, 2010).

Given that negative views about the self, the world, and self-blame cognitions were incredibly predictive of negative mental health outcomes here provides support for the theoretical basis of cognitive process therapy (Resick et al., 2017). Cognitive processing therapy believes that assimilated and over-accommodated beliefs following trauma exposure serve to perpetuate PTSD and other trauma-related mental health distress (Resick et al., 2017).

Clinical Assessment

It is incredibly relevant to assess the degree to which these psychosocial risk and resiliency factors are alive within an officer. This is true in part because unlike job-related physical injuries, the psychological injuries evident at clinically significant levels in one-quarter of our sample, are not obvious to others and may be unrecognized or else avoided by the officers who are essentially 'walking wounded.' The study findings of both risk and resiliency factors could be helpful to identify vulnerabilities and then within the context of psychotherapy to help determine clinically relevant targets for treatment as well as to track treatment progress over time. Looking to ACEs specifically, there are some important assessment implications here. Within psychological assessment for policing candidates, there has often been a belief that a certain amount of childhood adversity and the ability to overcome the same suggests resilience, and so is looked upon positively. However, here, it seems that even low amounts of previous

childhood trauma may confer risk to the development of negative mental health outcomes. I posit that negative beliefs about oneself, others, and the world are re-activated following the experience of trauma (Battaglia et al., 2019) and serve to impair recovery.

Institutional Supports

At the institutional level, there needs to be a greater focus on reducing the operational and organizational stressors as much as possible. Whether this reflects a greater access to funding and hiring of more officers, or for senior leadership to foster a more positive culture within the workplace. There need to be mechanisms to foster a sense that officers matter, and that the work that they do is valued by those in the community. Perhaps focussing on greater community engagement or community policing to work in partnership with those they serve to facilitate that relationship. In discussing the results of this dissertation project with participating police services, it became apparent that senior leadership plays a vital role in modelling a healthy approach to coping with emotions and distress. It is incredibly impactful when senior leadership can foster an open and approach-oriented mentality towards distress and difficult emotions. Lieutenant-General (Ret.) Romeo Dallaire is an excellent example of this, wherein multiple books and speaking engagements he has been disclosing of his PTSD and MI in the aftermath of leading the UN peacekeeping mission during the Rwandan Genocide (Dallaire & Humphreys, 2016). When considering the role of shame as an emotion that thrives in the darkness, modelling from senior leadership to build a more supportive workplace atmosphere might be healing in this regard.

Access to clinical supports is incredibly important, and it is also important that this process does not further heighten feelings of not mattering. For example, after overcoming

internal and external barriers to even seek help and support, being placed on a long waitlist can lead to an officer re-affirming their beliefs that their struggles are not worthwhile, and that they do not matter.

Strengths

There were several notable strengths to the current study, with the first few strengths related to the study sample. The sample of police officers who participated were demographically representative of the national averages for variables such as racialized group status and gender (Statistics Canada, 2024a). This provides some support for the external validity of the study findings to the broader population of Canadian police officers. The sample for this study was recruited from both municipal and provincial police forces in Ontario, giving us feedback from officers across levels of government and the differing policing mandates that entails. This further allowed us access to officers working in each type of service environment reflecting the landscape of policing in Ontario, including urban, suburban, rural, and Indigenous reserve environments. This provided the study unique perspectives from officers faced with differing stressors and experiences related to the environment they serve within, including the perspectives of officers who might be quite isolated in their postings to officers who serve in the areas they live. Data was collected from multiple services, in fact, 16 municipal services and the OPP participated in the project. Further highlighting the importance of this wide-scope of participation, there were several smaller municipal police services who eagerly participated in the study. This afforded us the opportunity to hear from services which have been understudied and offer a voice to officers who may not have participated in research before, giving us a true sense of the landscape of police mental health and well-being in Ontario, rather than solely relying on singular large city or regional service for data collection.

From its foundation, this project was developed in partnership with the police services themselves as key stakeholders where the data will hope to make an impact. Their feedback on the study goals and design was greatly valued in order to make the findings as relevant as possible to the mental health needs identified within the departments surveyed. This aligns with the fact that the research truly had the officer's best interests at heart, and we received feedback from officers which substantiated this hope. There has been a history of research on police officers, and not for police officers, which has stigmatized this population and their perceptions of research leading to hesitations towards participation.

This research project utilized a psychosocial lens, selecting variables which allowed for a holistic understanding of police mental health and risk and resiliency. Investigating key demographic variables, features of one's internal experience, along with their social and service environments and means of coping allowed us to address risk and resiliency from a wide-angled lens. Through the selection of risk and resiliency factors, and statistical modelling, we were able to account for variables that have been extensively studied in the context of risk and resilience, and then over and above these established variables, we were able to see how much unique variance was explained by the novel risk and resiliency factors. Thus, this study served as both a replication and extension in the literature on police mental health, in service of counteracting the current replication crisis in psychological research.

Limitations

Some of the limitations of the study include sample limitations surrounding self-selection bias. We acknowledge that those who chose to participate in the study may hold key characteristics or have had certain experiences which led to their participation, which may differ

from those who declined to participate. For example, perhaps those who participated have had certain trauma experiences, experiences in therapy, or an interest in mental health which in some form contributed to the findings of the study. However, we can only offer speculation in this regard. One service offered time in lieu, which fostered participation, but may have over-incentivized participation in the study leading to those lacking self-interest and influencing some of the findings.

We worked hard to reduce the length of the survey battery, though even still some officers provided feedback that it was quite long. We placed safeguards such as attention checks and a voluntary withdrawal of data, with the data from only 16 officers being excluded, which does suggest an adequate level of attention across the sample. However, odd occurrences such as a score of 0 on the PCL-5 were noted and are highly unusual, and potentially hampered statistical power to a certain degree.

Data was collected through self-report, and so we do not have clinician ratings of any of the mental health outcomes, which is notable given that underreporting is common in PSP populations (E.g., Pole et al., 2006). We hoped that by making the survey completely voluntary, confidential, and anonymous would allow the participants to let their guard down and respond as honestly as possible. The outcome measures utilized were highly correlated, but again we believe this reflects the nature of disorders as currently defined categorically, and not necessarily an issue with the measures themselves. Data was also collected cross-sectionally, which limits the ability to draw any type of causal conclusions, and it is difficult to determine whether the risk and resiliency variables influence the mental health outcomes, or vice versa. However, demonstrating their connectedness in this regard is still highly relevant to clinical practice and navigating important clinical targets for treatment. Another limitation surrounding the statistical

analysis is that we could not directly compare municipal and provincial officers on key variables due to ethics requirements, and these groups may differ due to differing mandates and service environments. Further limitations in power limited the ability to explore multiple interactions between some of these variables.

Future Directions

It is important to replicate the findings of this study, especially some of the small magnitude correlations, in a larger sample of police officers drawn from across provinces and across municipal, provincial, and federal levels of policing—which all have unique policing mandates and experiences—to allow for a complete picture of the relevance of the psychosocial risk and resiliency factors within the landscape of Canadian policing. Examining these variables in a longitudinal framework would inform their predictive validity with the relevant trauma-related mental health outcomes to better understand a causal framework.

It would be beneficial to better understand how these risk and resiliency factors fluctuate and change alongside mental health symptoms over the course of treatment to better understand how they relate to each other and their relevance within the clinical picture. Further, it would be beneficial to examine the interactive effects, determining whether some of these resiliency variables interact with risk factors in certain unique ways that would clarify their role. Through this type of work, we may then be able to tailor interventions to target the identified key risk and resilience factors and investigate the degree to which that improves treatment outcomes. This might also contribute to departmental initiatives and to assess the efficacy at the level of prevention.

Chapter 4: General Conclusion

The overarching goal of this dissertation project was to better understand psychosocial factors which serve to increase risk or resilience among police officers in the face of trauma exposure. Given the significance of so many of the selected factors, the project does appear to have taken an important step towards crafting a psychological protective vest for police workers. Thematically-connected psychological (i.e., facets of mattering, grit, socially prescribed perfectionism, self-compassion, posttraumatic cognitions) and social (i.e., workplace stress, job satisfaction, childhood adversity, social support, perceived public benevolence) factors were examined in their relatedness to PTSD, MI, depression, anxiety, burnout, life satisfaction, and posttraumatic growth. A real strength of this study was the large sample of officers ($N = 367$) examined across 17 police services in Ontario which provided a wealth of data from officers involved in rural, urban, suburban, and Indigenous reserve policing.

First, given the burgeoning understanding of the construct of MI within PSP populations, the need for a psychometrically sound measure of MI was recognized in order to accurately identify such risk and resiliency factors. Investigation of the psychometric properties of the MIA-PSP using CFA identified structural validity of a three-factor structure that was invariant across gender and years of service. Controlling for shared variance between the subscales, greater emotional sequelae and betrayals significantly predicted greater PTSD, posttraumatic cognitions, depression, burnout, and lessened life satisfaction. In addition, greater emotional sequelae significantly predicted greater anxiety. Further, while greater perpetrations and betrayals significantly predicted greater posttraumatic growth, greater emotional sequelae significantly predicted lessened posttraumatic growth. In general, findings suggest the MIA-PSP is a promising scale to assess MI within police populations.

Second, across the various trauma-related mental health outcomes, the variables of anti-mattering, self-compassion, and posttraumatic cognitions were identified most consistently as important psychosocial factors, with adverse childhood experiences, general mattering, work mattering, job satisfaction, grit, perceived benevolence, socially prescribed perfectionism, and social support also identified at times. Heightened anti-mattering and posttraumatic cognitions served as risk factors for increased PTSD, MI, depression, anxiety, burnout and poorer life satisfaction, with heightened self-compassion serving as a resilience factor in buffering against those outcomes and facilitating improved life satisfaction and heightened posttraumatic growth.

Early experiences of ACEs and perceived benevolence were predictive of PTSD and facets of MI. Socially prescribed perfectionism and job satisfaction were predictive of MI facets, with both job satisfaction and social support helping to explain depression and life satisfaction. Social support was implicated in posttraumatic growth. Grit explained variance in depression and anxiety. Finally, mattering was predictive of burnout.

The core risk and resiliency factors of posttraumatic cognitions, anti-mattering, and self-compassion are connected through a core emotion scheme of shame. Emotion- and compassion-focused therapeutic approaches, along with cognitive processing therapy, are all indicated as important treatment avenues in targeting this emotion scheme of shame. It is also vital for senior police leadership to model an approach to distress that is de-shaming and to facilitate a culture where officers feel as though they are valued, and their work is meaningful.

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APPENDIX A: Consent Form

Study Name:

The Psychological Vest: Trauma, Resiliency, and Posttraumatic Growth Among Police Officers

Researcher names:

Dr. Joel Goldberg (principal investigator), Department of Psychology, Faculty of Health, York University.
Anthony Battaglia (investigator), Clinical Psychology, Master of Arts, York University
Contact: battaga@yorku.ca or mail correspondence addressed to Anthony Battaglia, Department of Psychology, York University, Toronto, ON, M3J 1P3.

Purpose of the Research:

The purpose of this study is to examine the psychosocial risk and resiliency factors that impact the mental health of law enforcement officers and civilian operational staff. About 500 police officers and a comparable sample of civilian operational staff will be invited to participate in this online self-report questionnaire. While the research is more acutely focused on psychosocial risk and resiliency factors for police officers and civilian operational staff, we are also interested in comparing the level of functioning on these variables to an age-matched York University student group.

What You Will Be Asked to Do in the Research:

If you decide to participate in the research, you will be asked to complete an online survey which will take approximately 30-60 minutes to complete. You will begin by providing your informed consent. Then, you will complete some questionnaires assessing the risk and resiliency factors associated with trauma-related outcomes. Finally, you will complete a series of questionnaires assessing psychological outcomes that may be associated to your experience of trauma. Upon request, the findings from this research will be made available to you when we have finished collecting the data and close the study. You will have the opportunity to provide your email address to be placed in a draw to win one of 20 $50 Tim Horton's gift cards.

Risks and Discomforts:

This is a minimal risk study. However, there is the possibility that you may become uncomfortable thinking about or talking about your experiences involving trauma. You may choose to refuse to participate in any aspect of the research. We do not anticipate that you will experience greater discomfort than your current typical day. If any aspect of this study makes you feel uncomfortable, you may temporarily or permanently discontinue your participation.

Benefits of the Research and Benefits to You:

You may benefit from developing self-awareness or insight into the types of psychosocial factors that may be at play in your own life when considering outcomes of traumatic events. This may be a learning experience for you and provide a sense of meaningfulness knowing that this work is hoping to make direct change to your life and the lives of your fellow police

officers for the better. The future results from this study will be used to provide recommendations to police departments and integrated into clinical work, may be presented in papers and talks related to this research, may be used in subsequent research projects in the future, and will benefit psychological research and our knowledge base in general.

Voluntary Participation and Withdrawal:

Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the researchers or study staff, or the nature of your relationship with York University, and your respective police department, either now, or in the future.

If you decide to stop participating, you may withdraw without penalty, financial or otherwise, and you will still receive the promised inducement.

In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

Confidentiality:

Dr. Joel Goldberg (primary investigator) and Anthony Battaglia (investigator) will have sole access to the data collected in this study for research purposes only. You will not put your name or other directly identifying information on any materials. You will be asked to indicate your consent (if you decide to participate) using a check box. Data will be entered into a password-protected electronic database for data analysis. Your name will not be included in this database; you will be identified only by a unique ID number and **the information you share will not be disclosed with the police department.** The research team will not be able to directly identify you, and will not be able to share any of your individual information with your respective police department.

Any de-identified statistical files may be kept indefinitely. All statistical information will be presented in aggregate form. That is, when we analyze and present the results, there will be no way for anyone to tell which data belong to you, specifically.

Unless you choose otherwise, all information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research.

Confidentiality will be provided to the fullest extent possible by law.

The data collected in this research project may be used – in an anonymized form - by members of the research team in subsequent research investigations exploring similar lines of inquiry. Such projects will still undergo ethics review by the HPRC, our institutional REB. Any secondary use of anonymized data by the research team will be treated with the same degree of confidentiality and anonymity as in the original research project.

The researcher(s) acknowledge that the host of the online survey (e.g., Qualtrics, Survey Monkey etc.) may automatically collect participant data without their knowledge (i.e., IP addresses.). Although this information may be provided or made accessible to the researchers, it will not be used or saved without participant's consent on the researcher's system. Further, "Because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus *the confidentiality and privacy of data cannot be guaranteed during web-based transmission."*

Questions About the Research?

If you have questions about the research in general or about your role in the study, please feel free to contact us at battaga@yorku.ca. You may also contact the Graduate Program in Psychology at gradpsyc@yorku.ca and/or (416) 736-5290.

This research has received ethics review and approval by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines.

If you have any questions about this process, or about your rights as a participant in the study, please contact the Director, Research Ethics in the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca).

Resources:

If completing any of these measurements or participating in this study raises psychological concerns that you would like to discuss, please contact one of the following resources:

Boots on the Ground: if you are in need of support, call the anonymous First Responder-staffed helpline 24 hours a day, 7 days a week: **1-833-677-2668**

Distress and Crisis Ontario: For support over text, text SUPPORT to 258258**.** For online messaging visit https://www.dcontario.org/

If you are in **crisis,** please call **911** or visit your **nearest emergency department.**

Legal Rights and Signatures:

I consent to participate in *The Psychological Vest* conducted by Dr. Joel Goldberg and Anthony Battaglia.

I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. Checking the box below indicates my consent.

1. I have read the consent form and I agree to participate in this study

APPENDIX B: Study Measures

1. Sociodemographic Questions
2. Operational & Organizational Police Stress Questionnaires
3. The Adverse Childhood Experiences Questionnaire
4. Short Grit Scale
5. Self-Compassion Scale-Short Form
6. General Mattering, Anti-Mattering, & Work Mattering Scales
7. Job Satisfaction Scale
8. Burnout Scale - Short Version
9. Multidimensional Scale of Perceived Social Support
10. Public Trustworthiness Scale for Police - Benevolence
11. Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism Short Form
12. Posttraumatic Cognitions Inventory - 9 Item
13. Life Events Checklist for the DSM-5
14. Posttraumatic Stress Disorder Checklist for the DSM-5
15. Patient Health Questionnaire-9
16. General Anxiety Disorder Scale-7
17. Moral Injury Assessment for Public Safety Personnel
18. Posttraumatic Growth Inventory - Short Form
19. Satisfaction with Life Scale - Short Form

Sociodemographic Questions

1. What is your age (in years)?
   a) 18-25
   b) 26-30
   c) 31-35
   d) 36-40
   e) 41-45
   f) 46-50
   g) 51-55
   h) 56 or older

2. What is your biological sex?
   a) Male
   b) Female

3. How would you best describe your gender identity?
   a) Man
   b) Woman
   c) Non-Binary
   d) Two-Spirit
   e) I don't identify with the above
   f) Prefer not to answer

4. Do you belong to a racialized group?
   a) Yes
   b) No
   c) Prefer not to answer

5. Relationship status:
   a) Single
   b) Married/cohabiting
   c) Separated/divorced
   d) Widowed

6. Do you have any children? _____Yes _____No

7. Do you belong to the LGBTQ2+ community?
   a) Yes
   b) No
   c) Prefer not to answer

8. Education (check highest achieved):
   a) Less than high school
   b) High school diploma

c) One or two year post high school but not college
d) One or two year diploma from a trade or professional school but not college
e) Some college or university education
f) College or university degree (Bachelors)
g) Post graduate work
h) Post graduate degree

9. Please specify what program you took in college/university/trades school/professional school: _____

10. Employment Status
a) Full-time
b) Part-time
c) On leave
d) Retired
e) Unemployed

11. If you are an officer, please indicate your rank:
a) Constable
b) Constable Detective
c) Sergeant
d) Staff Sergeant
e) Inspector
f) Staff Inspector
g) Superintendent
h) Staff Superintendent
i) Chief Superintendent
j) Deputy Chief of Police/Commissioner
k) Chief of Police/Commissioner
l) Other: _____

12. If you are a civilian member, please indicate your role:
a) Communications officer (i.e., call taker/dispatcher)
b) Civilian analyst (e.g., digital forensics, child sexual exploitation, anti-human trafficking etc.)
c) Tech crimes (e.g., special constables)
d) Admin data entry (e.g., platoon records clerk, admin involved in operational data entry)
e) Other: _____

13. Years of Service: _____

14. Is your police service:
a) Municipal
b) Provincial
c) Federal

15. Which best describes the area where you currently work?
    a) Urban
    b) Suburban
    c) Rural
    d) Indigenous Reserve

16. What province/territory do you currently live in?
    a) Ontario
    b) Alberta
    c) British Columbia
    d) Manitoba
    e) New Brunswick
    f) Newfoundland and Labrador
    g) Northwest Territories
    h) Nova Scotia
    i) Nunavut
    j) Prince Edward Island
    k) Quebec
    l) Saskatchewan
    m) Yukon

Organizational Police Stress Questionnaire (PSQ-Org)

(McReary & Thompson, 2006)

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past 6 months, using a 7-point scale (see below) that ranges from "No Stress At All" to "A Lot Of Stress":

No Stress At All			Moderate Stress			A lot of Stress
1	2	3	4	5	6	7

1. Dealing with co-workers
2. The feeling that different rules apply to different people (e.g. favouritism)
3. Feeling like you always have to prove yourself to the organization
4. Excessive administrative duties
5. Constant changes in policy / legislation
6. Staff shortages
7. Bureaucratic red tape
8. Too much computer work
9. Lack of training on new equipment
10. Perceived pressure to volunteer free time
11. Dealing with supervisors
12. Inconsistent leadership style
13. Lack of resources
14. Unequal sharing of work responsibilities
15. If you are sick or injured your co-workers seem to look down on you
16. Leaders over-emphasise the negatives (e.g. supervisor evaluations, public complaints)
17. Internal investigations
18. Dealing with the court system
19. The need to be accountable for doing your job
20. Inadequate equipment

Scoring:

Total score is derived as a mean of items.

Operational Police Stress Questionnaire (PSQ-Op)

(McReary & Thompson, 2006)

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past 6 months, using a 7-point scale (see below) that ranges from "No Stress At All" to "A Lot Of Stress":

No Stress At All			Moderate Stress			A lot of Stress
1	2	3	4	5	6	7

1. Shift work
2. Working alone at night
3. Over-time demands
4. Risk of being injured on the job
5. Work related activities on days off (e.g. court, community events)
6. Traumatic events (e.g. MVA, domestics, death, injury)
7. Managing your social life outside of work
8. Not enough time available to spend with friends and family
9. Paperwork
10. Eating healthy at work
11. Finding time to stay in good physical condition
12. Fatigue (e.g. shift work, over-time)
13. Occupation-related health issues (e.g. back pain)
14. Lack of understanding from family and friends about your work
15. Making friends outside the job
16. Upholding a "higher image" in public
17. Negative comments from the public
18. Limitations to your social life (e.g. who your friends are, where you socialize)
19. Feeling like you are always on the job
20. Friends / family feel the effects of the stigma associated with your job

Scoring:

Total score is derived as a mean of items.

The Adverse Childhood Experiences Questionnaire (ACE-Q)

(Felitti et al., 1998; Merrick et al., 2017)

While you were growing up, during your first 18 years of life:	Yes	No
1. Did a parent or other adult in the household **often or very often…** Swear at you, insult you, put you down, or humiliate you? **or** Act in a way that made you afraid that you might be physically hurt?	Yes	No
2. Did a parent or other adult in the household **often or very often…** Push, grab, slap, or throw something at you? **or** **Ever** hit you so hard that you had marks or were injured?	Yes	No
3. Did an adult or person at least 5 years older than you **ever…** Touch or fondle you or have you touch their body in a sexual way? **or** Attempt or actually have oral, anal, or vaginal intercourse with you?	Yes	No
4. Did you **often or very often** feel that… No one in your family loved you or thought you were important or special? **or** Your family didn't look out for each other, feel close to each other, or support each other?	Yes	No
5. Did you **often or very often** feel that… You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? **or** Your parents were too drunk or high to take care of you or take you to the doctor if you need it?	Yes	No
6. Were your parents **ever** separated or divorced?	Yes	No
7. Did you witness one of your parents... **Often or very often** pushed, grabbed, slapped, or had something thrown at them by your other parent? **or** **Sometimes, often, or very often** kicked, bitten, hit with a fist, or hit with something hard? **or** **Ever** repeatedly hit at least a few minutes or threatened with a gun or knife?	Yes	No
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	Yes	No

While you were growing up, during your first 18 years of life:	Yes	No
9. Was a household member depressed or mentally ill, or did a household member attempt suicide?	Yes	No
10. Did a household member go to prison?	Yes	No

Scoring:
Total score is derived as a sum of items.

Short Grit Scale (SGS)
(Duckworth et al., 2009)

Directions for taking the Grit Scale: Here are a number of statements that may or may not apply to you. For the most accurate score, when responding, think of how you compare to most people --not just the people you know well, but most people in the world. There are no right or wrong answers, so just answer honestly!

Very much like me Mostly like me Somewhat like me Not much like me Not like me at all

1. New ideas and projects sometimes distract me from previous ones.*
2. Setbacks don't discourage me.
3. I have been obsessed with a certain idea or project for a short time but later lost interest.*
4. I am a hard worker.
5. I often set a goal but later choose to pursue a different one.*
6. I have difficulty maintaining my focus on projects that take more than a few months to complete.*
7. I finish whatever I begin.
8. I am diligent.

Scoring:
1. For questions 2, 4, 7 and 8 assign the following points:
    5 = Very much like me
    4 = Mostly like me
    3 = Somewhat like me
    2 = Not much like me
    1 = Not like me at all
2. For questions 1, 3, 5 and 6 assign the following points:
    1 = Very much like me
    2 = Mostly like me
    3 = Somewhat like me
    4 = Not much like me
    5 = Not like me at all

Add up all the points and divide by 8. The maximum score on this scale is 5 (extremely gritty), and the lowest score on this scale is 1 (not at all gritty).

Self-Compassion Scale – Short Form (SCS)
(Raes et al., 2011)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. Indicate how often you behave in the stated manner, using the following scale:

Almost never				Almost always
1	2	3	4	5

1. When I fail at something important to me, I become consumed by feelings of inadequacy.
2. I try to be understanding and patient towards those aspects of my personality I don't like.
3. When something painful happens, I try to take a balanced view of the situation.
4. When I'm feeling down, I tend to feel like most other people are probably happier than I am.
5. I try to see my failings as part of the human condition.
6. When I'm going through a very hard time, I give myself the caring and tenderness I need.
7. When something upsets me, I try to keep my emotions in balance.
8. When I fail at something that's important to me, I tend to feel alone in my failure.
9. When I'm feeling down, I tend to obsess and fixate on everything that's wrong.
10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.
11. I'm disapproving and judgmental about my own flaws and inadequacies.
12. I'm intolerant and impatient towards those aspects of my personality I don't like.

Scoring:
Subscales
- Over-Identification: 1, 9
- Self-Kindness: 2, 6
- Mindfulness: 3, 7
- Isolation: 4, 8
- Common Humanity: 5, 10
- Self-Judgment: 11, 12

Subscales & Total score is a sum of item scores.

General Mattering Scale (GMS)

(Marcus & Rosenberg, 1987)

Choose the rating you feel is best for you and circle the number provided.

1 = Not at all 2 = A little 3 = Somewhat 4 = A lot

1. How important do you feel you are to other people?
2. How much do you feel other people pay attention to you?
3. How much do you feel others would miss you if you went away?
4. How interested are people generally in what you have to say?
5. How much do other people depend on you?

Scoring:

Total score: sum of item scores

Anti-Mattering Scale (AMS)

(Flett et al., 2022)

Choose the rating you feel is best for you and circle the number provided.

1 = Not at all 2 = A little 3 = Somewhat 4 = A lot

1. How much do you feel like you don't matter?
2. How often have you been treated in a way that makes you feel like you are insignificant?
3. To what extent have you been made to feel like you are invisible?
4. How much do you feel like you will never matter to certain people?
5. How often have you been made to feel by someone that they don't care about what you think or what you have to say?

Scoring:

Total score: sum of item scores

Work Mattering Scale (WMS)

(Jung & Heppner, 2017)

Please select the rating which corresponds to how much you agree with the following statements:

Disagree very much					Agree very much
1	2	3	4	5	6

1. I think that society values the work I do.
2. I feel my work meets a societal need.
3. I am connected to society through my work.
4. People say that my work influenced their life.
5. My work influences people's lives.
6. My coworkers/colleagues would be disappointed if they knew that I may leave my job.
7. I feel like I matter to my colleagues/coworkers.
8. My coworkers/colleagues value my ideas and suggestions.
9. My boss/supervisor would be disappointed if they knew that I may leave my job.
10. My coworkers/colleagues appreciate my support and help.

Scoring:

Subscales

- Societal Mattering: items 1-5
- Interpersonal Mattering: items 6-10

Total and subscale scores are a sum of item scores.

Job Satisfaction Scale
(Judge et al., 1998)

DIRECTIONS: Some jobs are more interesting and satisfying than others. We want to know how you feel about your job. For each statement below, use the following scale to indicate which is most descriptive of your current job:

1 = STRONGLY DISAGREE
2 = DISAGREE
3 = SLIGHTLY DISAGREE
4 = NEITHER AGREE NOR DISAGREE
5 = SLIGHTLY AGREE
6 = AGREE
7 = STRONGLY AGREE

1. ____ I feel fairly well satisfied with my present job.
2. ____ Most days I am enthusiastic about my work.
3. ____ Each day of work seems like it will never end. (reverse-scored)
4. ____ I find real enjoyment in my work.
5. ____ I consider my job rather unpleasant. (reverse-scored)

Scoring:
Total score is derived as a mean of items.

Burnout Measure - Short Version

(Malach-Pines, 2005)

Intructions: Please use the following scale to answer the question: When you think about your work overall, how often do you feel the following?

1	2	3	4	5	6	7
Never	almost never	rarely	sometimes	often	very often	always

1. Tired
2. Disappointed with people
3. Hopeless
4. Trapped
5. Helpless
6. Depressed
7. Physically weak/Sickly
8. Worthless/Like a failure
9. Difficulties sleeping
10. "I've had it"

Scoring:

Total score is derived as a mean of items

- A score up to 2.4 indicates a very low level of burnout; a score between 2.5 and 3.4 indicates danger signs of burnout
- A score between 3.5 and 4.4 indicates burnout
- A score between 4.5 and 5.4 indicates a very serious problem of burnout
- A score of 5.5 requires immediate professional help.

The Multidimensional Scale of Perceived Social Support (MSPSS)

(Zimet et al., 1988)

Please select the rating which corresponds with how much you agree with the following items

Strongly disagree						Strongly agree
1	2	3	4	5	6	7

1. There is a special person who is around when I am in need.
2. There is a special person with whom I can share my joys and sorrows.
3. My family really tries to help me.
4. I get the emotional help and support I need from my family.
5. I have a special person who is a real source of comfort to me.
6. My friends really try to help me.
7. I can count on my friends when things go wrong.
8. I can talk about my problems with my family.
9. I have friends with whom I can share my joys and sorrows.
10. There is a special person in my life who cares about my feelings.
11. My family is willing to help me make decisions.
12. I can talk about my problems with my friends.

Scoring:

Subscales

- Significant Other: 1,2,5,10
- Family: 3,4,8,11
- Friends: 6,7,9,12

Item total and factor scores are derived as a mean of item scores.

Public Trustworthiness Scale for Police - Benevolence (PTSP-Ben)

(Mourtgos et al., 2019)

Instructions: Please indicate the extent to which you agree or disagree with the following statements.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

1. The public is very concerned about my welfare.
2. The public goes out of their way to help me.
3. The public is courteous and respectful in their interactions with me.
4. The public will not intentionally obstruct me in my duties.
5. When a conflict occurs between police officers and the public, the public responds to the conflict in a reasonable, benign manner.

Scoring:

Total score is derived as a mean of item scores

Multidimensional Perfectionism Scale - Socially Prescribed Perfectionism Short Form (MPS-SPP)

(Hewett & Flett, 1991)

INSTRUCTIONS: Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree & to what extent.

Strongly Disagree						Strongly
			Agree			
1	2	3	4	5	6	7

1. Anything that I do that is less than excellent will be seen as poor work by those around me
2. I feel that people are too demanding of me
3. Although they may not say it, other people get very upset with me when I slip up
4. My family expects me to be perfect
5. People expect nothing less than perfection from me

Scoring:

Total score is derived as a sum of items.

Posttraumatic Cognitions Inventory - 9 Item (PTCI)
(Wells et al., 2019)

We are interested in the kind of thoughts which you may have had after a traumatic experience. Below are a number of statements that may or may not be representative of your thinking. *Thinking of a traumatic incident or event in your life that really impacted you emotionally*, please read each statement carefully and tell us how much you AGREE or DISAGREE with each by putting the appropriate number between 1 and 7 in the box to the right of the statement. People react to traumatic events in many different ways. There are no right or wrong answers to these statements.

1	***2***	***3***	***4***	***5***	***6***	***7***
Totally disagree	*Disagree very much*	*Disagree slightly*	*Neutral*	*Agree slightly*	*Agree very much*	*Totally agree*

1. The event happened because of the way I acted	
2. People can't be trusted	
3. Somebody else would not have gotten into this situation	
4. I can't rely on other people	
5. I have no future	
6. People are not what they seem	
7. There is something about me that made the event happen	
8. I feel like I don't know myself anymore	
9. Nothing good can happen to me anymore	

Scoring:
Total and subscale scores derived as a mean of item scores
Negative Cognitions About the Self: 5,8,9
Negative Cognitions About the World: 2, 4, 6
Self-Blame: 1, 3, 7

Life Events Checklist for the DSM-5 Standard (LEC-5)

Instructions: Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it happened to you personally; (b) you witnessed it happen to someone else; (c) you learned about it happening to a close family member or close friend; (d) you were exposed to it as part of your job (for example, paramedic, police, military, or other first responder); (e) you're not sure if it fits; or (f) it doesn't apply to you.

Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

1. Natural disaster (for example, flood, hurricane, tornado, earthquake)
2. Fire or explosion
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)
4. Serious accident at work, home, or during recreational activity
5. Exposure to toxic substance (for example, dangerous chemicals, radiation)
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)
9. Other unwanted or uncomfortable sexual experience
10. Combat or exposure to a war-zone (in the military or as a civilian)
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)
12. Life-threatening illness or injury
13. Severe human suffering
14. Sudden violent death (for example, homicide, suicide)
15. Sudden accidental death
16. Serious injury, harm, or death you caused to someone else
17. Any other very stressful event or experience

PTSD Checklist for DSM-5 (PCL-5)

(Weathers et al., 2013)

Below is a list of problems that people sometimes have in response to traumatic life events. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.

Not at all – 0 A little – 1 Moderately – 2 Quite a bit – 3 Extremely- 4

In the past month, how much were you bothered by:

1. Repeated, disturbing, and unwanted memories of the stressful experience?
2. Repeated, disturbing dreams of the stressful experience?
3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?
4. Feeling very upset when something reminded you of the stressful experience?
5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?
6. Avoiding memories, thoughts, or feelings related to the stressful experience?
7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?
8. Trouble remembering important parts of the stressful experience?
9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?
10. Blaming yourself or someone else for the stressful experience or what happened after it?
11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?
12. Loss of interest in activities that you used to enjoy?
13. Feeling distant or cut o! from other people?
14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?
15. Irritable behavior, angry outbursts, or acting aggressively?
16. Taking too many risks or doing things that could cause you harm?
17. Being "superalert" or watchful or on guard?
18. Feeling jumpy or easily startled?
19. Having difficulty concentrating?
20. Trouble falling or staying asleep?

Scoring

1. A total symptom severity score (range - 0-80) can be obtained by summing the scores for each of the 20 items.
2. Initial research suggests that a PCL-5 cutoff score between 31-33 is indicative of probable PTSD across samples.

Patient Health Questionnaire-9 (PHQ-9)

(Kroenke & Spitzer, 2002)

INSTRUCTIONS: Over the last 2 weeks, how often have you been bothered by any of these problems?

Not at all (0) Several days (1) More than half the days (2) Nearly everyday (3)

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have motived? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead or of hurting yourself in some way

Scoring:

Sum of item scores

5-9: minimal symptoms of depression
10-14: moderate depressive symptoms
15-19: moderately severe depressive symptoms
>20: severe depressive symptoms

Generalized Anxiety Disorder-7 (GAD-7) Scale

(Spitzer et al., 2006)

INSTRUCTIONS: Over the last 2 weeks, how often have you been bothered by any of the following problems?

Not at all (0) Several days (1) More than half the days (2) Nearly everyday (3)

1. Feeling nervous, anxious, or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that it's hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid as if something awful might happen

Scoring:

Sum of item scores

0-4: minimal anxiety symptoms
5-9: mild anxiety symptoms
10-14: moderate anxiety symptoms
15-21: severe anxiety symptoms

Moral Injury Assessment for Public Safety Personnel (MIA-PSP)

(Roth et al., 2022)

Please read the following several statements describing morally relevant events related to public safety personnel service and indicate your level of agreement on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree).

1. I am bothered by feelings of sadness.
2. I am bothered by feelings of anger.
3. I am bothered by feelings of self-hatred.
4. I am bothered by feelings of guilt.
5. I am bothered by feelings of shame.
6. I am bothered by feelings of disgust.
7. I am bothered by feelings of fear.
8. I am bothered because I was made to ostracize a coworker as a Whistle Blower.
9. I am bothered because I was made to blame innocent coworker(s) for the institution's transgression (scapegoating).
10. I am bothered that I had to take disciplinary action against a staff member/coworker.
11. I am bothered that I chose to protect myself rather than protecting another person (e.g., leaving a house fire).
12. I am bothered that I had to hurt another person in order to do my job (e.g., hurting an individual to save another life).
13. I am bothered by the lack of institutional supports to assist the public safety personnel/ first responders who are expected to expose themselves to highly stressful incidents.
14. I am bothered that my employer did not provide sufficient training, which resulted in negative consequences (e.g., personal mental health, accidents, death).
15. I am bothered that my management or company does not uphold its values/philosophy.
16. I am bothered that my employer does not respect or recognize the work I do.
17. I am bothered that my employer does not acknowledge those that have died as a result of a mental illness acquired through the workplace.

Scoring:

Factor 1 – Emotional Sequalae – items 1-7
Factor 2 – Perpetrations – items 8-12
Factor 3 – Betrayals – items 13-17

Subscale and total scores derived as a sum of items.

The Posttraumatic Growth Inventory - Short Form (PTGI)

(Cann et al., 2010; Tedeschi & Calhoun, 1996)

Think of a traumatic incident or event in your life that really impacted you emotionally. Indicate for each of the statements below the degree to which this change occurred in your life as a result of this incident, using the following scale:

I did not experience this change as a result of this incident (0),
A very small degree (1)
A small degree (2)
A moderate degree (3)
A great degree (4)
I experienced this change to a very great degree as a result of this incident (5).

1. I changed my priorities about what is important in life.
2. I have a greater appreciation for the value of my own life.
3. I am able to do better things with my life.
4. I have a better understanding of spiritual matters.
5. I have a greater sense of closeness with others.
6. I established a new path for my life.
7. I know better that I can handle difficulties.
8. I have a stronger religious faith.
9. I discovered that I'm stronger than I thought I was.
10. I learned a great deal about how wonderful people are.

Scoring:

Factor 1 – Relating to Others – Items 5,10
Factor 2 – New Possibilities – Items 3,6
Factor 3 – Personal Strength – Items 7,9
Factor 4 – Spiritual Change – Items 4,8
Factor 5 – Appreciation of Life – Items 1,2

Total and factor scores derived as a sum of items.

Satisfaction with Life Scale - Short Form (SWLS)

(Diener et al., 1985)

Instructions: Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

_7 - Strongly agree

_6 - Agree

_5 - Slightly agree

_4 - Neither agree nor disagree

_3 - Slightly disagree

_2 - Disagree

_1 - Strongly disagree

1. _____ In most ways my life is close to my ideal.
2. _____ The conditions of my life are excellent.
3. _____ I am satisfied with my life.
4. _____ So far I have gotten the important things I want in life.
5. _____ If I could live my life over, I would change almost nothing.

Scoring:

Total score is derived as a sum of items.

- 31 - 35 Extremely satisfied
- 26 - 30 Satisfied
- 21 - 25 Slightly satisfied
- 20 Neutral
- 15 - 19 Slightly dissatisfied
- 10 - 14 Dissatisfied
- 5 - 9 Extremely dissatisfied

Conscientious Responders Scale

(Marjanovic et al., 2014)

In this investigation, the CRS was administered using a 7-point Likert type scale. To use the CRS effectively, embed its items randomly throughout the length of a questionnaire, not all in a row or cluster. To prevent responders from being surprised or confused by the instructional nature of the CRS items, we added a line to our questionnaire's instructions that warned, "Some of the items will ask you to answer them in a particular way…"

a) To answer this question, please choose option number four, "neither agree nor disagree".
b) Choose the first option – "strongly disagree" – in answering this question.
c) To respond to this question, please choose option number five, "slightly agree".
d) Please answer this question by choosing option number two, "disagree."
e) In response to this question, please choose option number three, "slightly disagree."