

Impacts of Alternative Policing on Officer Health: The Community Engagement Unit (CEU)

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Created by the Waterloo Regional Police Service (Ontario-Canada), the Community Engagement Unit (CEU) links high-needs community members with specially trained police and to appropriate social services. Whether living with homelessness, poor mental health, domestic violence, or substance use, and often with several of these challenges simultaneously, high-needs community members often require greater police attention. Indeed, CEU officers act as a “911 calls diversion centre” by redirecting high-needs individuals away from traditional law enforcement approaches and towards relevant social service agencies. However, due to their unique work environment, CEU officers likely experience additional/unique stressors that may impact their health. As a result, when developing alternative policing units like the CEU, recognizing the potential stressors of such work and their impact on the police service is essential. This mixed methods study utilizes semi-structured interviews and surveys to assess the work environment of CEU officers relative to traditional police officers to improve our understanding of stress-related health risk factors within alternative policing units.

Five CEU officers were recruited via email to participate in a 1-hour semi-structured interview. Thematic analysis of semi-structured interviews developed the CEU ‘phenotype’ by assessing the unique work environment, roles, and responsibilities of CEU officers. The CEU officers were asked to reflect on these aspects of their work compared to previous units (primarily patrol). The experience of stress in CEU is more prolonged and chronic, given the continuous nature of their interactions with high-needs individuals, as opposed to the fast-paced, case-to-case stress nature of patrol units. This ‘slow-burn’ stress, combined with the frustration of navigating under-resourced community social support systems and moral distress when cases lack resolution, is likely to present unique challenges to the officers' health and well-being.

Surveys collected standard demographic information and included validated scales to measure self-reported health, health-risk behaviours, given and received social support, and varying levels and types of police-specific stressors using the operational and organizational police stress questionnaires (PSQ-Op, PSQ-Org). Seven CEU officers (14.0%) and 43 traditional (TRAD) officers (86.0%) were recruited via e-mail to participate in the survey. CEU officers had lower levels of

fatigue (-42.5%), shiftwork (-57.6%), working alone at night (-58.3%) and internal investigations (-63.3%) compared to TRAD officers.

This study reveals distinct differences between CEU and TRAD officers. CEU officers report lower fatigue and less shiftwork but experience prolonged "slow-burn" stress due to ongoing interactions with high-needs individuals and frustrations with under-resourced support systems. These findings emphasize the need for tailored support systems in alternative policing units like the CEU. Improved mental health resources, decompression opportunities, and clear mandates can help reduce health risks associated with their unique stressors. This study adds to the research on alternative policing, highlighting the importance of understanding occupational health in non-traditional police roles.

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List of Abbreviations

Organizational and Occupational terms

WRPS	Waterloo Regional Police Service
CEU	Community Engagement Unit
TRAD	Traditional Police Units
FR	First Responder

Mental and Physiological Conditions

PTSD	Post Traumatic Stress Disorder	PD	Personality Disorders
MDD	Major Depressive Disorder	AUD	Alcohol Use Disorder
GAD	Generalized Anxiety Disorder	CVD	Cardiovascular Disease
SAD	Seasonal Affective Disorder	MSD	Musculoskeletal damage

Methodology and Analysis

AOR	Adjusted odds ratio
BFI-10	Big Five Inventory - short version
PSQ-ORG	Organizational Police Stress Questionnaire
PSQ-OP	Operational Police Stress Questionnaire
MS-PSS	Multidimensional Scale of Perceived Social Support
GHQ-12	General Health Questionnaire - short version
MEDS	Measure of Emotional, Physical, & Behavioral Markers of Eustress & Distress
EDA	Exploratory Data Analysis

Statement of Positionality

As researchers engaged in policing and health research, we acknowledge how our perspective shapes the research process and affects its outcome. Our individual backgrounds, experiences, and perspectives inevitably influence how we frame research questions, select methodologies, collect data, and analyze findings.

My personal and academic journey shaped my stance as an advocate for community policing and improving police-public interactions. Grounded in the belief that police serve as crucial frontline connections to the most vulnerable community members, my upbringing in the Waterloo Region has instilled in me a deep appreciation for community cohesion and the importance of fostering positive relationships between law enforcement and residents. Moreover, my academic pursuits in public health underscore my conviction that occupational health in policing is paramount to enhancing the quality of interactions between police officers and the public they serve. Through research, I strive to promote policies and practices prioritizing the well-being of both communities and law enforcement personnel. In this positionality statement, I recognize the interdependence of public safety and officer health in fostering safer, healthier, and more equitable communities.

By transparently disclosing my positionalities, I aim to enhance the reflexivity of this research process and facilitate critical engagement with current findings. I invite readers to consider how our perspectives may shape the interpretation of results and encourage dialogue that enriches the broader discourse in policing and health.

Background

A wide variety of adverse health outcomes has been documented in first responder (FR) populations due to stress associated with the duties, tasks, and roles associated with public safety work. Notably, police officers in community-focused policing units often work at the intersection of public health and law, leading to a novel kind of work environment with a unique stress profile. While community policing approaches have been increasingly adopted in modern policing (Lee et al., 2019; Greene, 2000), little work has been done to evaluate the effects of these organizational changes on officer health. As a result, my thesis aims to establish if alternative policing units, such as the Community Engagement Unit (CEU) developed by the Waterloo Regional Police Service, create a unique work environment that may have specific health-related effects.

1.1 The North American Policing Climate

Canadians import countless cultural ideas and political concerns from the United States due to both geographical proximity and the instant global access to news provided by the internet (Doucette, 2016; Brewster, 2023). The Canadian policing atmosphere is linked to the American context as a result. High-profile cases from both countries shape the Canadian policing landscape. American cases, such as the deaths of George Floyd, Ahmaud Arbery, and Breonna Taylor, are well-documented examples that recently propelled the ‘Black Lives Matter’ movement within both nations. While this connection is essential to recognize, Canadian policing is still distinct, with separate cultures/histories, internal regulations, goals, and training standards. These differences have resulted in distinct policing outcomes can be seen between the two nations. For example, the United States has rates of police-related deaths that are five times higher than Canada (Hoofnagle, 2020). Incarcerations are substantially higher in the US, where 505 per 100,000 people are incarcerated; meanwhile, Canada incarcerates just 115 per 100,000 people (WPB, 2023).

Black and Indigenous peoples interacting with the Canadian justice system continue to experience various forms of racism, discrimination, and unfair treatment (Cotter, 2022). Because of this history and high-profile cases/investigations, one in five Black and Indigenous people had little or no confidence in the police, double the rate reported from non-Indigenous, non-visible minorities (Cotter, 2022). Indeed, the level is substantially higher than the national rate, as only 2% of Canadians reported having no confidence in the police in 2019 (Ibrahim, 2020). Modern Canadian

incidents related to the difference in the way police are perceived include the deaths of Regis Korchinski-Paquet (a Black-Indigenous woman) and Chantel Moore (an Indigenous woman). On May 27th, 2020, six Toronto police officers responded to a domestic disturbance call by Korchinski-Paquet's mother involving violence and alcohol. When arriving at the apartment, a discussion about the dispute began in the hallway (SIU, 2020). Korchinski-Paquet requested to use the bathroom and was followed into the apartment by multiple officers. Instead of going to the bathroom, Korchinski-Paquet walked out onto the 24th-floor balcony and held the door closed. She scaled the balcony to cross to the neighbouring balcony, which was blocked off by netting. She lost her balance on the railing and fell to her death. The special investigation unit found no overt racism, and allegations of her being pushed off the balcony were unsubstantiated (SIU, 2020). During a wellness check on June 4th, 2020, Chantel Moore approached the responding officer with a knife (Bissett, 2022). The officer retaliated by firing four shots, killing Moore. The officer's actions were deemed justified through an investigation by Quebec's Bureau of Independent Investigations (GNB, 2021). In 2022, however, Moore's death was ruled a homicide (Bissett, 2022). Occurring only one week apart, a series of rallies and protests calling for justice were held. Together, these events brought racialized police interactions to the forefront of public consciousness.

Since trust in Canadian police systems and police officer action fluctuates, police officers often state that they feel unwelcome during interactions (Foreman, 2021). A 2022–2023 Statistics Canada survey found that 67% of Canadians had high confidence in the police (Statistics Canada, 2023). However, this was lower among Southeast Asian (63%), Black (52%), and Japanese (47%) individuals, with confidence dropping further for Southeast Asian (45%) and Black (32%) individuals born in Canada (Statistics Canada, 2023). In 2019, Canadians were polled on various measures regarding their local law enforcement by Ibrahim (2020). Almost half of Canadians thought their local police were good at being approachable (49%), enforcing the laws (46%), and ensuring the safety of citizens (44%). Many reported that they treat people fairly (42%), promptly respond to calls (40%), and inform the public on crime prevention (37%). However, fewer than one in five (18%) Canadians felt that the local police performed well on all six measures (Ibrahim, 2020). These shifts in public sentiments toward policing and toward police themselves are felt by police officers in the line of duty and their personal lives as judgments on the career choice of officers and their personal code of ethics. The disconnect between how officers view their role and how they are perceived by

the public can promote moral injury (as discussed in 1.4), which may further heighten stress levels. The elevated stress is not only limited to public interactions but may also extend into personal relationships, where officers might face questions or criticism about their profession. Thus, the ongoing scrutiny and fluctuating trust from the public can directly impact officer mental well-being, reinforcing the importance of understanding how external perceptions contribute to occupational stress in law enforcement.

1.2 Uncharted Territory: Alternative Policing Programs

Community-oriented policing was first introduced by British statesman Robert Peel in 1829, and was based on nine principles of democratic policing (Patterson, 1995). These principles advocate for a model of policing that is based on community engagement, minimal use of force, and a focus on preventing crime rather than simply responding to it (Eve et al., 2003). Components of community-based policing include the diversion of authority from police services to community services, the focus on problem-oriented strategies, facilitating and encouraging the community to participate in police policy decision-making, and empowering citizens to participate in crime prevention (Skogan & Hartnett, 1997). Community-oriented policing re-emerged in 1960's North America in police organizational philosophy and strategy to repair racial tensions between police organizations and Indigenous and African-American communities (Giwa, 2018). By the 1990's, most police forces in Canada had incorporated community policing into their mandates (Horne, 1992). This move towards community policing occurred as police forces recognized the limitations of conventional policing methods to address complex social issues and crime prevention. The Ontario Provincial Police (OPP) and municipal police services, like the Waterloo Regional Police Service, have implemented diverse community policing programs to enhance trust, transparency, and mutual respect. These efforts have been particularly focused on marginalized communities and areas with higher crime rates, aiming to foster a sense of shared responsibility for public safety and improve overall quality of life.

The pressure from negative public sentiments regarding police has helped create the desire for alternatives to traditional policing models, such as community policing approaches. The strategies used in community policing can be quite diverse in goals and execution. Because of the inherent variety of organizational structures seen in these units, there is no 'standard' framework within community policing akin to what is often seen in traditional policing units. This project will explore

the features of one unique initiative, the Community Engagement Unit in a regional police force, as an example of a community policing framework.

Created in the early 2000's by the Waterloo regional police Service (WRPS) in Ontario, Canada, the Community Engagement Unit (CEU) connects high-needs community members with a history of police interaction to community services that address pervasive life issues. Whether they are experiencing long-term homelessness, poor mental health, domestic violence, substance use, or several of these challenges, high-needs community members often require significant attention from the police. CEU officers act as an internal 9-11 calls diversion program by redirecting high-needs individuals away from traditional law enforcement responses. However, by helping to address the most intense community problems, CEU officers are likely to experience different stressors from their colleagues.

Unlike regular patrol police, CEU officers often experience multiple, prolonged interactions, often with the same vulnerable individual. As well, based on previous interviews, CEU officers and community members may feel emotionally connected. Due to this connection, officers may feel an enhanced sense of accomplishment when they can help community members whom they have come to know over weeks or months of interactions. These cases are often inherently difficult to resolve due to their need for a public health and community-oriented approach using resources in very short supply. Eustress is likely to be experienced within this environment due to the unique combination of accomplishment, meaningful challenge and emotional connection with cases. Unfortunately, the working environment of CEUs will likely lead to CEU officers experiencing organizational and operational stressors at different rates compared to other policing units. The inherent differences in organizational and operational stressors could promote higher levels of distress. Given that work-related psychosocial stress in policing has been associated with an increased risk for poor health outcomes (Carleton et al., 2020), the lack of research on the effect of occupational stress in alternative policing units is concerning. These differences in organizational stressors need to be assessed to understand the effects alternative policing structures may have on officer health. The proposed study will aim to fill this gap by establishing whether alternative policing units, like the CEU, create a 'phenotype', or unique sets of work stressors, that may have specific health-related effects.

1.3 Stress: Eustress and Distress

Stress is complicated to define due to its context-driven and individual nature. While everyone knows the feeling of stress, the pressure goes beyond simply an emotional response. Stress manifests in one's physiology, behaviour, subjective experience and cognitive functions (Kupriyanov & Zhdanov, 2014). Triggered by external or internal state changes, stressors vary widely, and no two individuals may be equally sensitive. In addition, although stress is often characterized only by its harmful qualities, stressors can be conceptualized as resting on a spectrum ranging from harmful to beneficial, which reflects the classical biological stress paradigm developed by Hans Selye. As the founder of stress theory, Selye conceptualized stress as the “nonspecific response of the body to any demand” and a necessity for survival (1974, p. 137). Selye differentiated between two forms of stress: *eustress* was associated with positive feelings and healthy states, and *distress* was related to negative emotions and disturbed bodily states. At the time, it was unclear if these labels referred to a category of stress, or stimuli that caused stress to accumulate (Nelson & Simmons, 2003). Selye later elaborated on the eustress and distress conceptualizations by referring to eustress and distress as adaptive, or nonadaptive responses, respectively, to stressful exposures (Selye, 1974). This range of possible reactions is referred to as the eustress-distress paradigm. Recently, research has indicated that eustress and distress may co-occur and, therefore, may not necessarily be mutually exclusive (Kupriyanov & Zhdanov, 2014). That is, one or multiple stressors may trigger multiple and potentially conflicting emotional states, such as feeling challenged (eustress) and hindered (distress) simultaneously (Kupriyanov & Zhdanov, 2014; Pluut et al., 2022).

Whether a stressor causes eustress and/or distress is dictated by both personal and situational factors. Features of the stressors that modulate the stress response include characteristics such as the source of stress, duration, intensity, controllability and desirability (Le Fevre et al., 2003). As discussed by Le Fevre, stress responses are often rooted in an individual's situational perception and interpretation (2003). Hence, susceptibility to a given stressor will often vary between individuals.

Within the occupational environment, recommendations center on optimizing rather than eliminating stress (Le Fevre et al., 2003). This focus on optimization is at the core of various stress-based theories within occupational psychology. For example, the Yerkes-Dodson Law states that an optimal level of arousal, or stress motivates task performance, whereas over-, or under-stimulation

will theoretically lead to poor productivity and poorer performance (Corbett, 2015). Under this framework, common management practice suggests that a “reasonable” amount of pressure, anxiety, or fear in the environment improves employee performance (Certo, 2003; Lussier, 2002). Within the occupational environment, one could define eustress as stress that promotes employee health, well-being, and or performance. Le Fevre et al. (2003) recommend looking at eustress or distress experiences as heavily mediated by perception, individual characteristics, and the nature of the stressor itself. Essentially, eustress or distress can occur in any occupational setting with the right combination of employee personal traits, perception and stressor elements. As a result, rather than looking at stress as a universally “negative” factor in the workplace, Le Fevre’s model suggests that there may be an optimal amount of stress, which is individual in nature. Indeed, according to Le Fevre’s model, careers that provide individuals with a strong locus of control and efficacy may lead to greater eustress. While police organizations may not be able to change the nature of a stressor, there is potential to adjust officer perceptions of potentially stressful experiences. Interventions such as coaching could realign organizational and individual goals while recognizing and adapting behavioural and cognitive patterns that cause distress (Hargrove et al., 2015).

Common indicators of eustress include feelings of happiness, a positive affect, and a sense of meaningfulness in work (Parker & Ragsdale, 2015; Simmons, 2000). While eustress itself is relatively understudied, the major indicators of eustress have been shown to impact the workplace experience positively. For example, meaningfulness in occupational settings is often described as the degree to which work fulfills one’s needs, or matches one’s values and beliefs (Michaelson et al., 2014), and has been linked to many positive work outcomes, such as increased job satisfaction, work motivation, engagement, performance, citizenship behaviours, and attachment to occupations and organizations (Michaelson et al., 2014). As well, occupational happiness is often defined by high work engagement, job satisfaction, and effective organizational commitment (Fisher, 2010), while positive affect, or one’s propensity to interact with others and challenges positively, significantly improves employee well-being and job performance (Lin et al., 2014).

A specific personality type is likely attracted to the sort of higher-stress environments typically found within FR occupations. For example, FRs often display certain personality traits such as the need to be in control, a relatively high tendency to be obsessive-compulsive, being highly motivated

by internal factors, being action-oriented, having a high need for stimulation or for immediate gratification, being easily bored, being risk-takers, displaying a rescue personality, being highly dedicated, and having a strong demand to be needed (Mountfort & Wilson, 2022; Patton et al., 2018; White et al., 2018). These traits may keep an FR productive despite being highly distressed (Mountfort & Wilson, 2022) and may improve stress tolerance (Fribog et al., 2005). For example, EMS personnel have shown high rates of conscientiousness and lower rates of neuroticism (McBride, 2018), which is a combination indicative of a composed, confident person who is motivated, detail-driven and somewhat obsessive (McBride, 2018) and may make them more likely to experience eustress within this specific occupational context.

Eustress in first responders is often overlooked by researchers due to a focus upon the high level of distress expected and experienced in their work. Additionally, measuring the nuanced differences between distress and eustress can be difficult. Consequently, there are no studies, to our knowledge, involving measurements specific to eustress in first responders. However, some eustress work exists in other populations, such as nursing students, who reported strong feelings of accomplishment and satisfaction in providing patient care and aiding in the daily function of an otherwise stressful medical environment (Gibbons et al., 2008). Student nurses often stated that feeling they felt like making a difference provided them with a sense of satisfaction in their work (Gibbons et al., 2008). This displayed an orientation that aided them in coping with distress (Gibbons et al., 2008).

1.4 Occupational Stress and Mental Health

A person's occupation can profoundly influence their mental health through various mechanisms. The stress inherent in job demands, workload, and the overall workplace environment can precipitate anxiety, depression, and burnout (Calvo, & Gutierrez-Garcia, 2016; Leiter, & Schaufeli, 1996; Taris, et al., 2015). For those with more precarious careers, job insecurity or adverse working conditions can foster helplessness and diminished self-worth (Zheng, et al., 2021). Conversely, a rewarding occupation that offers support, recognition, and opportunities for professional growth can significantly enhance mental well-being, creating a sense of purpose and fulfillment (Adam, et al., 2021). Thus, the nature and conditions of one's professional life can lead to/impact various mental health outcomes.

It is well documented that FRs have significantly higher rates of mental health challenges than the public, such as post-traumatic stress disorder (PTSD), depression, anxiety disorders, substance use disorder, alcohol use disorder (AUD), suicidal ideation, and burnout (Edgelow et al., 2022; Huang et al., 2022; Jones, 2017). For example, North American FRs experience twice the PTSD (Wilson et al., 2016), and 1.39 times the rate of suicide seen in the general population (Teisman et al., 2021). The accumulation of acute and chronic stressors and the types of traumatic events will increase the risk of such mental health conditions (Søvold et al., 2021). Among FRs, potentially traumatic events often include sudden violent or accidental deaths, serious transportation accidents, and physical assaults (Carleton, 2019). In particular, police officers and paramedics tend to report a greater diversity of potentially traumatic exposures than firefighters and correctional workers (Carleton, 2019). As well, police are more likely to report causing severe injury, harm, or death in the course of duty compared to civilian workers within police organizations (Carleton, 2019; Cohen, & Garis, 2018).

While the trauma-focused approach to understanding occupational stress is common throughout the FR literature, additional non-violent operational and organizational stressors also play a role. Operational stress is often described as job task-related (e.g., paperwork, staff shortages), while organizational stress addresses the sociocultural context in which the job is performed (e.g., supervision and leadership, lack of training) (McCreary & Thompson, 2006). Canadian FR's self-reported exposures to operational and organizational stressors were associated with increased odds of screening for PTSD, MDD, GAD, SAD, PD and AUD (Carleton et al., 2020). Various models revealed that individual stressors from the Police Stress scale (operational & organizational), increased the adjusted odds ratio (AOR) of positive screens for PTSD (AOR effect size range: 1.20-1.51), MDD (AOR: 1.13-1.62), GAD (AOR: 1.14-1.55), SAD (AOR: 1.12-1.53), PD (AOR: 1.14-1.55), and any mental disorder (AOR: 1.17-1.54) (Carleton et al., 2020). In addition, 8 of 20 organizational stressors (AOR: 1.15-1.34) and 17 of 20 operational stressors (AOR: 1.09-1.26) were associated with higher odds of a positive screen for AUD (Carleton et al., 2020). Of these organizational stressors, the most stressful common exposures included staff shortages, inconsistent leadership style, bureaucratic 'red tape', a lack of resources, differential treatment, dealing with challenging co-workers, and feeling a constant pressure to 'prove yourself' to the organization (Carleton et al., 2020).

Beyond traumatic events and operational/organizational stressors, FR stress comes from the interaction of individual values and occupational responsibilities. For example, moral distress, as defined by Jameton in 1984, occurs when individuals are forced to act against their ethical values due to external constraints, often leading to emotional and psychological turmoil (Gustavsson et al., 2020). Moral distress research originated in nursing care (Kälvemark et al., 2004), but has also been utilized in FR occupations due to their strict ethical standards and need to make split-second decisions for the safety of others (Viele, 2018). Police officers may experience heightened levels of moral distress when their law enforcement duties conflict with their moral beliefs (Violanti et al., 2017). The nature of the tasks police undertake may provide an opportunity for moral distress; officers' beliefs and institutional protocols may not match regarding complex acts such as the use of force (Papazoglou, & Chopko, 2017), the potential for racial profiling (Thorton, 2024), or the response to volatile cases (Papazoglou, & Chopko, 2017; Papazoglou et al., 2020). If moral distress is left unaddressed, an imbalance between the individual's inner convictions and overt behavior might affect core values and personal moral integrity (McCarthy, & Gastmans, 2015). High levels of moral distress may lead to increased sick leave, burnout and resignation rates (van Zuylen et al., 2023).

The mental strain of FR occupations is potentially exacerbated by the 'moral injury' workers experience (Koenig & Al Zaben, 2021; Davies et al., 2019), defined as feelings of shame, grief, meaninglessness, and remorse for violating one's moral values (Koenig & Al Zaben, 2021). Moral injury among FRs has been linked to the high frequency of traumatic experiences (Joannou et al., 2017; Lentz et al., 2021). While all types of FRs experience moral injury, policing is one of the few professions where the potential use of force or deception are seen as necessary and accepted tools to enforce the law (Bartlett, 2023; Norman et al., 2019). However, as professional expectations and personal values clash, officers can often feel an increased moral complexity or conflict in their actions (Lentz et al., 2021). Indicative of this moral complexity, police commonly identified a sudden violent death as the worst traumatic event to experience, whereas firefighters and paramedics more commonly identified a sudden accidental death (Carleton, 2019).

From an ethics standpoint, police are often uncomfortable during interactions that require additional time or resources due to organizational pressures to quickly resolve potential sources of conflict (Kleinig, 1993). The discomfort that officers may experience is more critical/pressing than

ever, as poorly executed interactions with civilians can worsen an officer's mental health and well-being (Demou et al., 2020). Consequently, police officers often cope with moral conflict by conceptualizing themselves as an agent of the organization rather than individual actors (Dick, 2005).

1.5 Occupational Stress and Physiological Health

Stress is more than solely a psychological state. It is an adaptive neuroendocrine response that affects all organ systems (Mariotti, 2015; Apazoglou et al., 2017; Juster, McEwen, & Lupien, 2010). Furthermore, some studies have shown that, in the general population, psychosocial stress carries a dose-response association with mortality (Russ et al., 2012). Of course, FRs are not immune to this association. Indeed, one study conducted by Violanti et al. (2013) revealed the average life expectancy of a male police officer to be 21.9 years shorter than that of men in the general population. While the drop in life expectancy could be due to a variety of factors, physiological strain caused by psychological stress is likely to contribute. For example, in a systematic review focused on firefighters, a link was observed between psychosocial stressors and poor health indicators in cardiovascular function, musculoskeletal disorders and gastrointestinal disorders (Igboanugo et al., 2021). Paramedics have also shown higher rates of PTSD-linked sleeping disorders and obesity (Hegg-Deoye et al., 2014). Physiological health outcomes for police often include increased risk for cardiovascular diseases (CVD), cancer, and other stress-related diseases (Violanti et al., 2013). Overall, differential exposure to occupational stressors is likely to cause health disparities between and within the FR professions.

Policing can require intense physical activity, often with little warning. Unsurprisingly, this characteristic of policing often leads to high cardiovascular strain and may contribute to higher rates of CVD risk factors, CVD diagnoses, and on-duty CVD events among police officers (Hartley et al., 2011; Han et al., 2018). Occupational stress exposures exacerbate the relationship between CVD and intense physical activity in police as they are often positively associated with CVD risk factors (Magnavita et al., 2018). After controlling for age, a statistically significant association between CVD and occupational stress has been observed in male, but not female, officers (Ramey et al., 2011). Unfortunately, these factors lead to police officers experiencing CVD at 1.7 times the general population's rate (Zimmerman, 2012). Organizational pressure and lack of support are positively associated with predominant features of metabolic syndrome, such as abdominal obesity and reduced

high-density lipoprotein cholesterol, among female, but not male, police officers (Hartley et al., 2011b).

Musculoskeletal pain is not a novel concern in policing and is well-studied. With occupational tasks ranging from sedentary to physically strenuous, many officers are likely to incur musculoskeletal damage (MSD; de Trindade et al., 2015). For example, 50% of officers in a Korean sample experienced musculoskeletal pain in the last month (Cho et al., 2014). The high prevalence of pain reported by these officers is indicative of the sample experiencing a predisposition to mild chronic pain (Cho et al., 2014). As well, MSD symptoms have been associated with age, job overload, exposure to vibration, inadequate working conditions, ergonomic factors, muscle overload, awkward postures, physical inactivity, and obesity (de Trindade et al., 2015). Additionally, the daily use of heavy safety equipment, such as bulletproof vests, has been linked to such injuries (de Trindade et al., 2015). However, musculoskeletal pain is influenced by more than just physical stress on the body, as psychological stress interventions have been shown to reduce the perception of musculoskeletal pain (Serra et al., 2020). In a cross-sectional study on the Brazilian Military Police, a strong positive correlation was discovered between the prevalence of stress and the prevalence of symptoms of musculoskeletal disorders (Serra et al., 2020). High stress levels can also exacerbate perceptions of existing musculoskeletal issues and could slow the rehabilitative process (Hartzell, Dodd, & Gatchel, 2017). This prolonged healing process could lead to more injury. That is, intramuscular injury can lead to the formation of scar tissue which can reduce strength, increase fatigue and subsequently increase injury recurrence risk (Alessandrino, & Balconi, 2013).

Psychosocial stress is also thought to induce gastrointestinal symptoms by altering intestinal function mediated by the immune system, the hypothalamic–pituitary–adrenal axis, and the autonomic nervous system (Pinto et al., 2000). The link between stress and the gastrointestinal system is likely a primary reason that one in five police officers report complaints of gastrointestinal issues (Marcatto et al., 2021). Gastrointestinal symptoms prevalent in police officers include feeling a lack of energy, loss of personal enjoyment, increased appetite, feeling depressed, trouble concentrating, restlessness, nervousness and indigestion (Huerta-Franco et al., 2013).

Research Goals

This study investigated an alternative policing unit known as the CEU, wherein the officers experienced a working environment with unique stressors that may have specific health-related effects. The primary purpose of this study was to assess the nature of the occupational environment experienced within alternative policing units and compared to more traditional units and environments using a mixed-methods approach. Additional study objectives included performing a narrative review to (a) identify survey instruments used to measure perceived stress in police and (b) aggregate previous research that attempted to determine the health-related effects of occupational stress among police officers, particularly those in community policing units. Given that they are tasked with addressing some of the most challenging/complex community problems, this thesis proposes that CEU officers experience stressors that are different from their colleagues in terms of both their nature and intensity.

Methods

2.1 Research Design and Theoretical Orientation

A retrospective within-subjects design was selected for the interviews to allow officers to compare their current CEU experience with their prior WRPS unit experiences. Semi-structured interviews and subsequent thematic analysis helped to reveal the CEU ‘phenotype’ by defining the unique work environment, roles, and responsibilities of CEU officers. A phenomenological research approach, as described by Byrne (2001), was utilized for the data collection and analytical phases with the interview data. This study investigated the reported experiences of CEU officer stress and its health impacts using an interpretive phenomenological orientation.

Interpretive phenomenology, as described by Martin Heidegger, emphasizes the interpretation and understanding of phenomena (Rai & Singh, 2022). This approach, as opposed to the descriptive phenomenological tradition, aims to uncover hidden meanings and implications (Rai & Singh, 2022). When used in qualitative research contexts, the phenomenological orientation allows researchers to engage with and understand personal and complex phenomena (Alhazmi & Kaufmann, 2022). The phenomenological orientation states that there are two forms of knowledge: the intra-mental, in which

a given person's consciousness is engaged in the act of knowing, and the extra-mental, where there are fundamental principles, laws and structures separate from an individual's perception.

The phenomenological orientation holds three metaphysical assumptions. The phenomenological orientation presupposes the condition of 'givenness' - where subjects or objects of reality exist either perceptually or non-perceptually (Husser, 1970; Rai & Singh, 2022). An example of subjects or objects that exist perceptually are physical items, and subjects or objects that exist non-perceptually are cultural concepts of stress. Secondly, the phenomenological orientation assumes 'intentionality' - where an individual who interacts with their reality receives information on two levels, 'noematic interpretations' and 'hyletic data' (Willford, 2013; Rassi, & Shahabi, 2015). Noematic interpretations are the meanings/experiences driven by information that a person consciously receives; hyletic data are any other information that is passively received (Willford, 2013; Rassi, & Shahabi, 2015). Lastly, the phenomenological orientation assumes 'essence' - where the consciousness of a participant or researcher generates meaning from a subject or object based on continuously interacting with or having multiple distinct experiences with one subject. This can result in multiple differing understandings based on the various experiences with a subject or object, previous noematic interpretations, and the hyletic data that are received.

With regard to this project, this phenomenological orientation outlines the perspective officers experience in their daily lives. The existence of extra-mental knowledge reminds us that officers are in the real-world and are experiencing a real structure around them. These structures include formal and informal societal and organizational structures. Officers are interacting with this structure constantly, which can change their experiences such as their experience of stress. To understand their interaction with these extra-mental systems, interviews are needed to learn about officers' experiences and varying intra-mental knowledge.

The CEU is an ideal sample for this approach as they all have similar experiences within the unit but diverse backgrounds before CEU involvement. This thesis provides a snapshot of what it means to be a CEU officer and how it compares to a broad range of police occupational experiences. Throughout this research project, the CEU officers were encouraged to compare their current and past policing experiences. As a result, we were able to find the "essence" of the CEU's occupational experience, or the CEU occupational 'phenotype' compared to previous TRAD officer experiences.

A between-subjects survey design was also used to compare CEU stress profiles to other sworn officers. Data were collected using validated scales to measure self-reported health, health-risk behaviours, and varying levels and types of stress and social support for officers across the different units of the police service. Self-reported health variables of interest include measures of gastrointestinal, musculoskeletal, cardiovascular, and mental disorders. In addition, demographic characteristics such as age, ethnicity, gender, income, and education were collected.

The stress response is often modulated by the biology of sex and psychosocial factors influenced by gender. Therefore, relevant findings were stratified by gender and reported accordingly. Other demographic factors (age, ethnicity/cultural identity, education, household income, time in the force, rank, relationship status, parental status and number of children) were controlled via statistical analysis when relevant.

2.2 Research setting, population, and sample

This research was completed in collaboration with the WRPS, the seventh-largest police service in Ontario. The WRPS oversees 535,000 residents across Kitchener, Waterloo and Cambridge municipalities and the Townships of Wellesley, Wilmot, Woolwich and North Dumfries. There are approximately 820 active WRPS sworn officers, 17 of whom were in the CEU during this study.

The survey was distributed via a recruitment email distributed by the WRPS research team to all active sworn officers. Those who participated in the survey accessed it via the distribution link. All consent materials were incorporated electronically at the beginning of the survey.

Interviews were conducted with the CEU officers recruited through emails sent by the WRPS research team. Once recruited, consent materials were sent before an interview via Microsoft Teams. To comply with the University of Waterloo's online interview consent protocols, additional verbal consent was documented via audio recording (after consent to record was obtained). Before the interview, the researcher sent a signable Consent letter (Appendix B) and followed up to obtain consent using an Oral Consent Script (Appendix C) and then documented consent on an Oral Consent Log (Appendix B). The oral consent log was uploaded and stored separately from the collected interview data.

2.3 Qualitative Data Sources and Procedures: Interview

The online interview consisted of 11 questions and typically lasted about 45 minutes. The interview script (Appendix C) included questions relating to participant demographics, stress in the CEU, how the CEU compared to other units, perceived stress-related health outcomes, and protective/risk factors. Each question was expanded by asking probes for clarification or more nuanced answers using a semi-structured interview format. Potential probes were designed to prompt study participants to consider elaborating, expanding or discussing opposing statements and opinions. Participants had the right to decline to answer questions/probes or withdraw entirely from the interview without negative consequences. The interview was audio recorded with permission to facilitate information collection and transcription for analysis. The transcription of audio recordings was conducted via the NVivo 14 software provided by the University of Waterloo. Specific details on the transcription process can be seen in the analysis section.

2.4 Quantitative Data Sources and Procedures: Survey

The survey was conducted via Qualtrics. Qualtrics has implemented technical, administrative, and physical safeguard services to protect the information provided from loss, misuse, and unauthorized access, disclosure, alteration, or destruction.

The online survey (Appendix D) required 15-20 minutes. Participants were reminded that they could decline to answer any survey question and to withdraw at any time for any reason. In addition, participants had the right to withdraw after survey submission by emailing the randomly generated ID number provided within the survey. There was no time limit for participants to withdraw their data after survey submission. Demographic information (such as age or ethnicity) was requested as part of participation to assess themes or patterns within these factors. Participants sequentially completed the Big Five Inventory (BFI-10), the General Health Questionnaire (GHQ-12), the Police Stress Questionnaire – operational (PSQ-Op), the Police Stress Questionnaire – organizational (PSQ-Org), the Short Measure of Emotional, Physical, and Behavioral Markers of Eustress and Distress (MEDS), the Multidimensional Scale for Perceived Social Support (MS-PSS), and the Two-Way Social Support scale (2W-SSS). Data collected during this study was securely stored by the supervising faculty member in a password-protected computer and will be retained for at least seven years. Only researchers associated with this project have access to the data.

The Big Five Inventory (BFI-10) is a brief personality assessment tool designed to measure the OCEAN personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Gosling, Rentfrow, & Swann, 2003). Two questions assessed each OCEAN trait, and participants were asked on a five-point scale how much they agreed or disagreed with various personality traits. Scores were then corrected for reverse coding and averaged for each OCEAN personality trait (Rammstedt, & John, 2007). Final scores for each OCEAN trait ranged from 1 to 5, with higher values indicating a stronger presence of the given personality trait. The BFI-10 was selected for its brevity and common use in psychological research. In addition, previous research has shown acceptable reliability for each OCEAN trait using Cronbach's alpha ranges: extraversion (0.46-0.89), agreeableness (0.24-0.74), conscientiousness (0.62-0.82), openness (0.36-0.79) and neuroticism (0.55-0.82) (Balgiu, 2018; Rammstedt & John, 2007).

Police stress scales were selected based on their prevalence within police stress research as assessed by a scoping search. A narrative review (Appendix F) was conducted to identify the most used stress scales in occupational stress research related to policing using the Scopus database. A literature search using Scopus allowed for the simultaneous filtering of articles by keywords within multiple occupationally relevant journals, including those related to occupational medicine, policing, first responders, and stress. The selected journals were Occupational Medicine, International Journal of Environmental Research and Public Health, Journal of Occupational and Environmental Medicine, International Journal of Emergency Mental Health, Policing, Giornale Italiano Di Medicina Del Lavoro Ed Ergonomia, Journal of Police and Criminal Psychology, Stress and Health, International Archives of Occupational and Environmental Health, and Journal of Traumatic Stress. The document types included in the search were both primary articles and reviews. Key terms used in the search were "police," "occupational," and "stress" and the search query were structured to filter documents by these keywords in the title, abstract, and keywords fields. Additionally, the search was limited to documents published between 1990 and 2023 in English and in the final publication stage. The specific search query can be viewed in Appendix F. In utilizing this exhaustive search strategy on the Scopus database, 193 journal articles were reviewed for measures of police stress and health. Of these articles, 101 measured stress experienced by officers utilizing scales, or inventories. Forty-nine unique scales with a cumulative 113 instances of use were identified through the review. Of these scales, the Police Stress Questionnaire – Operational (PSQ-Op) (12 instances) and the Police Stress

Questionnaire – Organizational (PSQ-Org) (9 instances) were the most popular police-specific stress scales, being tied for first and second, respectively.

McCreary & Thompson (2006) developed the PSQ-Op and PSQ-Org scales to measure the everyday stressors associated with policing. The creation of the PSQ-Op and PSQ-Org was motivated by the need for more police-specific stress scales and concerns that general stress questionnaires may fail to holistically measure all required stressors in these organizational settings (McCreary & Thompson, 2006). Initially identified through police focus groups, the sources of/indicators of stress were categorized as Operational (i.e., stressors associated with doing the job) and Organizational (i.e., stressors related to the organizational setting and culture). Both scales asked participants to indicate their stress level associated with 20 given tasks, or potential stressors over the last six months. Each question was based on a 7-point scale ranging from “no stress” to “a lot of stress”. Both measures were assessed for validity and reliability in addition to their prevalence in the literature. In the initial report by McCreary & Thompson (2004), the PSQ-Op was shown to be highly reliable (Cronbach’s $\alpha > 0.9$; corrected item-total correlations between .40 and .60) and positively correlated with other general stress measures. In that same report, the PSQ-Org was also deemed valid and reliable (Cronbach’s $\alpha > .89$; item-total correlations ranged from 0.43 to 0.71).

The Multidimensional Scale for Perceived Social Support (MS-PSS) asked officers to rate (on a 5-point scale) how much they agreed or disagreed with 12 statements based on their perceived social support network. The questions assessed their ability to reach out to friends, or family members about potential stress over the last six months. Investigations of the MS-PSS have shown good to excellent internal consistency and test-retest reliability (Cronbach’s $\alpha = 0.81-0.98$ in non-clinical samples; $0.92-0.94$ in clinical samples) (Wongpakaran et al., 2011). The scale was selected due to its reliability and for compatibility purposes across other FR research projects conducted by Dr. John Mielke.

The brief Two-Way Social Support Scale (2W-SSS) focused on measuring the giving and receiving of social support in four principal dimensions: giving emotional support, giving instrumental support, receiving emotional support, and receiving instrumental support (Shakespeare-Finch, & Obst, 2011). Composed of 12 statements, participants were asked how likely they could rely on others or be relied on. Responses were on a 6-point Likert scale, ranging from “not at all” to

“always”. The 2W-SSS was shown to have high internal reliability (Cronbach’s $\alpha = 0.88$) (Obst et al., 2019). The 2W-SSS was selected for its high reliability and to supplement the MS-PSS by adding elements such as giving social support to the survey.

The General Health Questionnaire (GHQ-12) assessed physical and mental well-being over the last six months. The GHQ-12 asked about eight long-term diagnostic categories often associated with stress: respiratory disorders, gastrointestinal disorders, musculoskeletal disorders, hypertension, high cholesterol, diabetes, mood disorders, and anxiety disorders (Hankins, 2008). The GHQ-12 also assessed rates of stress-related health behaviours. Some of these questions focused on positive influencing factors, such as recreational exercise, while others focused on symptoms of stress. Each question utilized relevant time frames and measures based on the behaviour of interest. Specifically, behaviours of interest assessed in the questionnaire included factors such as sleep, energy levels, consumption of stimulants, depressants and pain relief medications, smoking, and physical activity outside of work. The GHQ-12 scale was selected for compatibility purposes across other FR research projects conducted by Dr. John Mielke.

The short form of the Marker of Eustress and Distress Scale (MEDS) measures markers of eustress and distress within organizational settings (Pluut, Curseu, & Fodor, 2022). The MEDS was developed to supplement the lack of occupational tools to operationalize and measure the distinction between stress and distress (Pluut, Curseu, & Fodor, 2022). The MEDS consists of 18 items based on Lazarus’ multidimensional conceptualization of stress as indicated by various emotional, physical, and behavioural markers (Pluut, Curseu, & Fodor, 2022; Lazarus, 1966). Participants were asked on a 5-point Likert scale ranging from “strongly disagree” to “strongly agree” with various statements related to markers developed by Lazarus (Pluut, Curseu, & Fodor, 2022). Final scores for eustress and distress were each calculated as an average of 9 items each, which resulted in continuous values ranging from 1- 5, with higher values indicating higher levels of eustress or distress. From MEDS, high reliability has been established for both the eustress (Cronbach’s $\alpha = 0.84$) and distress (Cronbach’s $\alpha = 0.84$) sub-scales (Pluut, Curseu, & Fodor, 2022).

2.5 Feedback & Appreciation

Written appreciation (Appendix E) was electronically provided upon interview, or survey completion. The feedback provided to participants included a statement of appreciation, details about

the purpose of the study, a restatement of the provisions for confidentiality and security of data, an indication of when a study report were available and how to obtain a copy, contact information for the researchers, and the ethics review and clearance statement.

2.6 Data Preprocessing and Retention

Audio recordings were created through the video-call software used in remote interviews, or via phone recording of in-person interviews. All identifying factors in the audio recording were censored upon recording completion. Additional elements, such as other real names of people, or places, were removed. The interviewer made verbatim transcripts via the NVivo 14 software. These transcripts included descriptive texts with relevant emotions, nuances of speech, and gestures. Within 24 hours of the interview, a de-identified short field note was created, including general notes about the atmosphere, interview execution, and participant origin and details. These field notes were used to contextualize the participants. De-identified transcripts, field notes, and audio files will be stored on a secure University of Waterloo server for a minimum retention period of seven years.

Minimal data pre-processing was required due to the survey format, as all questions are multiple-choice. Questions left blank were uniquely coded to be analyzed for differential answer omission, whether through missingness or any value purposefully left unaddressed, such as “refuse to answer” or “do not know”. Individuals with true missing values were removed from the data analysis, while purposefully indicated missing values were analyzed as their own categorical data element in comparison to participants who did report. In addition to individual scale elements being assessed across groups, relationships between these elements were assessed.

2.7 Analysis

2.7.1 Interview

A reflexive thematic analysis of the interview data was conducted following the procedure described by Braun and Clark (2012). Because of the study’s exploratory nature, the use of thematic analysis was selected due to its flexibility and high compatibility with semi-structured interviews. The researcher first became familiar with each transcript by reading it multiple times using NVivo software. Notes of early thoughts and impressions were taken to prepare for initial code generation.

Through reflection on transcripts and interview notes, inductive and deductive codes were created for stress and health indicators from the perspective of the researcher and the participant. A deductive approach was explicitly used in assessing eustress due to its subtle and nuanced nature. This involved directly describing the stress provided to the interview participants and then requesting potential experiences connected to the construct. Eustress was likely to be missed if an inductive approach was used. Inductive approaches would necessitate waiting for its natural occurrence of a relatively rare and subtle construct often overshadowed by the more common understandings of stress. The researcher then reviewed materials with these codes in mind before a final discussion about modifications for clarity and to reduce the overlap of codes. Once assessed, the code was finalized for alignment with study aims/objectives and cohesion with data. The verbatim transcripts were evaluated using these codes. Quotations deemed to meet the definition of a code were extracted and placed into a table format for accessibility. If a quotation met multiple code criteria, it was identified under the code with which it most strongly aligned. The selected quotations became the main discussion points and drivers for the study's findings.

Common themes were determined from the generated codes. Themes were then compared to the codes extracted to check the logic of the relationship between the code and the theme. If there was no logical relation between the codes and the themes seen, groupings were adjusted, compiled, or split to create more meaningful clusters. Once completed, these themes were formally defined and discussed in the context of this thesis. Through NVivo, visual representations of concepts and their interactions were created for further discussion.

2.7.2 Survey

Through a combination of R.4.41 and Python 3.12, graphical and non-graphical exploratory data analysis (EDA) was used to understand the nature of the survey data. Non-graphical EDA parameters were generated, including frequency, central tendency, and variance of each variable and scale collected. Missing data was removed before means and standard deviations were calculated for each variable via Python's 'scipy.stat.describe' function. Due to this removal of missing data, some elements have fewer responses than total respondents due to skipping or optional withdrawal from any given question. Additionally, univariate graphical EDA was conducted to look for general trends and further establish familiarity with the data.

Due to the small sample of CEU officers, differences in variance between them and other WRPS officers would have been difficult to detect. The small sample of CEU officers also meant that normality testing within this group would not be meaningful. As a result, equal variances between CEU and traditional (TRAD) officers were assumed, which allowed for the testing of normality across each variable as a combined sample, including both CEU and TRAD officers. This approach allowed for the assessment of normality on a variable-by-variable basis despite the limitations imposed by sample size. A two-sided chi-square test for normality was applied through R's `Pearson.test` to each ordinal variable in the entire dataset, ensuring that no more than 20% of the expected counts are less than 5. When too many cells have small expected values, the test becomes less sensitive, which means that even if there is a true association or difference, the test may not detect it (York, 2002). Under this testing method, none of the variables collected met the criteria for normality.

Since all ordinal data elements violated the normality assumption required for Analysis of Variance, Scipy's implementation of the Mann-Whitney U test in Python was applied for ordinal data with redacted missing responses, which is suitable for variables such as Likert scale ratings of stress, social support, and health behaviour frequencies. The Mann-Whitney U test operates under several key assumptions. First, the dependent variable must be measured at the continuous or ordinal level, such as the Likert scale used in this study. Second, the independent variable should consist of two categorical, independent groups, in this case, CEU versus TRAD officers. Third, there must be independence of observations, meaning there is no relationship between the observations within or between the groups. In this study, individual data collection and anonymity ensured that responses were independent, with no interference between participants. The ranked mean and ranked sum used in the Mann-Whitney U calculation were calculated by ranking each variable using Python's `rank` function before calculating the mean and sum for each variable.

For nominal variables such as other demographic variables and the presence of health conditions, Base R's Fisher's exact test was used. Unlike the chi-square test, which cannot be applied when cells have fewer than five observations, or the G-test of independence, which requires a large sample size, Fisher's exact test is ideal for smaller samples. This test is suitable for $n \times m$ tables of varying sizes when analyzing nominal data. The assumptions of Fisher's exact test include the

following: individual observations must be independent; the row and column totals are fixed; and each observation is mutually exclusive, meaning that each data point can only be classified into one category.

The stress response is often modulated by the biology of sex and psychosocial factors influenced by gender (Dedovic et al., 2009). Since there is a high level of congruence between sex and gender (Statistics Canada, 2020), separate analyses were unlikely to produce informative results on a sample of this size. Therefore, interview and survey data were assessed with gender-based analysis. Other demographic factors that confound the stress response were controlled via statistical analysis when relevant or possible.

Results

3.1 Interview

3.1.1 Sample

Five CEU officers were interviewed between April and July 2024. Four of these interviews were recorded for transcription, and one was assessed using a field note method since consent to record was not given. All the officers who participated in the interviews identified as White men and were on average 41.6 years of age. Participating officers had an average of 11.1 years of experience within the police force and while previous unit experiences varied, all officers had been part of the patrol unit. All the participants reported a domestic partnership with an average of two children.

3.1.2 Workplace stressors

Prevalent and pressing stressors began to display a high rate of repetition within the sample of 5 officers. This suggests that the sample size provided sufficient data to identify common themes across the interviewees, indicating a level of saturation regarding the primary stressors experienced by the officers. However, it is worth noting that some nuanced aspects of stress may have been overlooked due to its inherently individualistic nature. Workplace stressors

As previously discussed in section 1.3, occupational stressors can vary in terms of type of exposure and intensity on an individual basis. Occupational stressors identified through the interview process were primarily described relative to previous patrol unit experience. Sources of stress most often included the nature of the cases being addressed in the unit, internal and external expectations of the unit, and an increase in sedentary time. Each of these experiences will be discussed and elaborated in the following sections.

3.1.3 Officer perceptions

Officers often felt a notable difference in the experience of stress in the CEU when compared to patrol. A typical case of the CEU was often described as more of a “slow burn”, reflecting a long-term exposure to stress, rather than the fast-paced and reactive stress experienced by walking into a case on patrol.

“It differs in CEU ... it's more of a frustration with the system, whereas my previous unit, which was [patrol] ... it's more stressors with just the amount of work and that you kind of feel like you have to go from one to the next and there's no real breather point in the middle.” (Officer 1) “You're sort of journeying with a lot of the people with a lot of the cases, a lot longer than you are on patrol. On patrol, you go, you deal with it, but then you have that next call... whereas with a lot of the stuff that we deal with because it's you know things around mental health or addictions, chronic homelessness and stuff we're constantly getting reachouts from community agencies ... you're trying to figure out proactive things to do, to try and address things, and you're trying to, you know, you gain calls directly from some of those people.” (Officer 2)

Despite the relatively longer nature of their cases, CEU officers often felt more prepared for them than those they faced when on patrol. In particular, the relationship between community members, community resources, and the officer allowed them to prepare for and predict the needs of the community members.

“On patrol, you're the first on scene whether it's a homicide or a suicide or a bad domestic or a missing persons ... Or you could just be walking into a drop [9-11] cell phone call and it's nothing. But you still have to be at that ready state, right? So whereas with CEU most of what we do is planned, so it makes it a little easier to go in with more information about what we're walking into, who we're dealing with” (Officer 2)

While mental health issues are commonly an underlying cause of crime on patrol, CEU officer interactions with community members experiencing poor mental health were a source of frustration and often led to feelings of helplessness or inadequacy. CEU officers often cited interactions with homeless, addicted and mentally unwell youth as salient stressors in their work due to the lack of case buy-in and motivation that arises from these cases. The stress was compounded by the lack of required community services and the inherent complexity of the cases.

“...frustrations are [from] lack of communication between community partners, so there's often the silo effect between community partners, often for privacy reasons.... A lack of funding for certain programs and that aren't necessarily tantamount to like wellness or a dignified kind of holistic approach. For people that are in need of care, mainly around the mental health system.” (Officer 4)

“... seeing a lot of these little kiddos who are 13 and 14 who are experiencing tons of trauma who are living in encampments, who are using hard drugs, it's really hard for me ... it's particularly a lot of these young females.” (Officer 4)

Due to their inherent complexity and vulnerability, many cases never felt truly 'solved' for CEU officers. Despite this, officers often felt a sense of accomplishment when addressing case problems and subsequently closing cases. It made officers feel as though they had made a difference in the lives of community members by providing them with aid and resources. While occurring less often than desired, cases that made significant progress, or those closed due to recovery, did lead to officer satisfaction. However, even in cases that appeared to improve with access to resources, there was no guarantee that those community members would not regress. Therefore, even these rare, successfully addressed cases did not guarantee officers a strong sense of satisfaction.

“There's that dissatisfaction of knowing most of the time like it didn't really address the root cause. It just dealt with this and then we'll have to deal with it again or with that person again, right. So it's, I wouldn't say having those ones where you walk away and feel like, ‘yeah, we got it done that we're never gonna deal with that again’. That's, I'd say, pretty rare.” (Officer 2)

“Hey, it's a positive outcome to the job, which is great, right? But at the end of the day, for me, it's not so much the positive outcome. It's the seeing somebody that's so broken...” (Officer 4)

3.1.4 Politics & Supervision

Officers often referenced the ‘loose’ mandate of the CEU, leading to the group being a catch-all unit for the force. Issues encountered by patrol may be sent to the CEU despite not being recurrent

and therefore not meeting the current goal of the CEU to reduce repeat 9-11 calls. The perceived ambiguity of the CEU mandate also allowed significant strategic adaptation from upper management to address community concerns. From the perspective of the CEU officers, internal and external political pressures could shift the role of the CEU and lead to uncertainty around their place in the WRPS, which caused some officers to be concerned about the future of their relationships with community and service collaborators. For example, in June of 2021, the School Resource Officer (SRO) program was cancelled in the Waterloo region due to concerns about students feeling unsafe due to police presence in the school environment (Bueckert, 2021). The CEU has been proposed as a means to fill the responsibilities of the former SRO position due to the high level of police calls originating in schools. One officer described specific concern with this scenario as it could interfere with their current roles and responsibilities.

“So patrol is responding to a lot of calls to the schools ... They're hoping [for CEU] to mitigate that, but the problem with that is that we've spent 15 years in this kind of role trying to build relationships with partners ... So these agencies who are comfortable reaching out, they trust us, will now have to go to patrol. We'll have to wait four or five hours for somebody who maybe doesn't get it, and that's my worry...” (Officer 4)

Officers also expressed an increased worry about internal investigations and punishment in the CEU compared to patrol because the CEU has increased “eyes” on the unit due to the increased complexity of cases and the pressure to produce results.

“I know that the chief wants to know how this is playing out because he has the mayors reaching out to him and he has, you know, MPP's reaching out to him and stuff like that, right.” (Officer 2)

“The sense of pressure with a lot of the stuff ... because we deal with higher profile things and more complex things. ...I've got ...the deputy chief is gonna be asking at the end of the day, my inspector, what did I do today about this? So I just need to push through and get it done.” (Officer 2)

3.1.5 Intra-organizational dynamic

Officers often experienced colleagues across the force who misunderstood the purpose of their unit. Those with misunderstandings of the unit's purpose tended to be the “old school” police in units that focused on enforcement of the law over community relations. While CEU officers didn’t feel as though this changed their working relationships with such officers, it did lead to a sense of needing to prove oneself as an asset to the WRPS and to get results.

“I'm not entirely sure what the other officers and the other units opinions of the CEU. ... they call us like the Kissy huggy unit or, you know, we're kissing babies and shaking hands, which is fine. I just think officers might in general have sort of a negative view of the unit and feel like it's not really policing that we're doing. But I don't think it's directly had any effect on any relationships I've had with other officers. So it didn't impact work at all when you're trying to collaborate with officers, say on patrol or in an investigative unit” (Officer 1)

“[Understanding the CEU] just requires education and I probably would have thought the same if I was on the other side of it. But being on this side it's often frustrating because it's like you're constantly feeling like we're having to sell ourselves to the community partners, sell ourselves to the public and then sell ourselves internally to our colleagues.” (Officer 4)

3.1.6 Police Distrust & Relationship Building

Police distrust was often discussed when building relationships between police, new cases and community partners. Stress surrounding police distrust was often temporary, as most officers indicated that trust was built early in these relationships through clear communication and time spent with community partners.

“We go into a lot of places where police aren't people's favourite, and you can feel that negative energy when we get into some places. But I think once they understand what we do and that we're there to help people as opposed to arrest people or look to find them for other purposes, they tended sort of let their guards

down and they become a little more cooperative and are willing to have conversations.” (Officer 1)

“It's like an uphill battle trying to build rapport with them, to ... prove myself with everybody.... their minds are blown when I don't just walk in and, like, beat somebody up. There's this expectation that I'm just going in and like “you, you're my target today”. Their minds are blown when you show up, ... talk to somebody and they engage back with you.” (Officer 3)

The topic of racial and cultural diversity was pervasive and sometimes controversial in discussions regarding case interactions and community relationships. Most officers felt that racial and cultural diversity played an important role in their position. Officers often took a more humanistic perspective towards policing and adapted to individual needs when possible, or requested aid from other officers with differing backgrounds when necessary. Some officers felt that diversity driven policies within community organizations could come off as politically driven and not necessarily in the best interest of cases. Connecting and understanding people regardless of culture, or ethnic background was still paramount to these relationships for all officers.

“[I feel as though community service staff think], like ‘young white Officer Guy is gonna come in and just like do XYZ’. ... I think you can kind of build-up that relationship. I don't think I've ever experienced any issues myself. I think within our unit we have a lot of diversity, and we have the ability to slow things down and actually plan them where we can say... We can say we'll bring along a female officer, or we have officers that speak other languages in our units where we can....” (Officer 3)

“We're doing the things that are considered progressive ... without actually considering the consultations or the actual needs of that individual.... At the end of the day, it comes down to individuality - and I think if a person is competent, is caring, is compassionate to me, that should supersede the colour of your skin. And when agencies [enact progressive policies] to check off boxes ... It's not always beneficial to an individual. ... If someone came into an organization, they needed

counseling from trauma - if that [case] was consulted [and stated], "I would like a counselor who understands the plight of my people, who understands my culture from the outset." Then that's important, but to have [the case worker] who you've been working with about your trauma for several years and all of a sudden have that [case worker] arbitrarily removed, it's completely not right." (Officer 4)

Beyond the workplace, one participant felt that the police officer label impacted his interactions with new people in social settings. However, the label of "police officer" did not seem to impact current long-standing social relationships:

"When we go to the police college, one of the first things they tell you is 'OK, now that you've been hired as a police officer, you're always the police officer'. ... Sometimes you don't really want everybody to know... but it's somehow works itself into the conversation. ... I kind of feel like people look at me differently. ... [Long term friends] know I'm a police officer obviously, but it hasn't changed any relationships with any of those people." (Officer 1)

3.1.7 Physiological Health Effects

Like the stressors previously described, the health effects discussed often compared current health experiences in the CEU to patrol. As well, many health effects reported by CEUs were interconnected and modulated one another. Nonetheless, officers often speculated on potential occupational causes of such health changes.

Notably, the self-reported health effects varied based on their perception of the CEU compared to previous units. While the more consistent schedule within the CEU, as opposed to the shift work from patrol, was often seen as beneficial by most officers, it was not a universal experience.

"I would say that for me it's probably been better for the most part. ... I could never get into a good sleep pattern, so I couldn't really enjoy the days off...."
(Officer 2)

“I would say the last couple of years, which kind of coincides with my time and CEU, I haven't really been sleeping as well, ... I don't know if that's an age thing or if it's strictly coincidence or if it's directly related to the work that we do.... my sleep issues is like my hips are sore at night sometimes and I don't know if that's in relation to sitting in a desk more often than not.” (Officer 1)

With the increased schedule flexibility and more consistent presence in the office due to paperwork, officers often felt improvement in diet and water consumption.

“I can actually take a lunch. Try and remember to drink fluids a lot. Whereas before, I just wasn't doing it. It just was almost impossible for me. I didn't want to carry a big water bottle with me while I was walking around.” (Officer 1)

The increased complexity of cases often comes alongside more paperwork and documentation. Because of this, the officers indicated an increase in sedentary time within the workplace. Some found a potential link between this increase in sedentary behavior and musculoskeletal issues and weight gain. “All of a sudden, you realize, like, I've just been sitting all day and my back is killing me... when I first came to this branch, I put on weight. I hadn't put weight on in years ... I was that much more sedentary than I ever was on patrol...” (Officer 3)

3.1.8 Mental health

Most officers expressed continuing use of coping strategies such as willful suppression. Willful suppression is the conscious “shutting down” of emergent thoughts or emotions (Lissek et al., 2007; Brook & Woods, 2005). As a coping strategy, this was more common in previous units due to the fast-paced nature of patrol and the need to move from case to case quickly.

“... I think the one thing that's kind of keeping me healthy as far as stress goes is that I'm pretty good at disconnecting from it and I try not to carry it outside of work at home and I've got the decent home life.” (Officer 1)

Officers also often felt the inherent flexibility of the CEU officer's role allowed for a stronger mental health management approach. The flexibility allowed officers to take “a step back” and decompress after experiencing traumatic events, or high-stress situations.

“[Cases are] not necessarily mostly emergent. [In the CEU] we do have a little more of the luxury of trying to check in with each other of trying to ... take that time to step back or something like that. Unless there's a really hard deadline, that's ... looming.” (Officer 2)

Being in the office more due to paperwork led to a more sedentary lifestyle in the workplace. The CEU officers often discussed the use of “paperwork shifts” where officers schedule hours if not a full shift to catch up on required paperwork, this schedule is often placed in direct contrast to officers' experience on patrol, in which paperwork is typically done at the scene of an event or arrest. For some officers, this was a potential risk to their mental health if not compensated for with an active lifestyle outside of work.

“...physical fitness has been a coping strategy...it's not really a choice... I need to go do something hard. I had to move heavy things. Because I have to challenge myself otherwise, I can't just sit on the couch and watch Netflix like I just have to put myself through the paces.” (Officer 4)

One officer even indicated that they felt as if the CEU was connected to improvements within their family life.

“it enables me to have more time with my kids.... I become a better listener, I've become someone who's more aware of my blind spots... more cognizant of things like emotional regulation and attachment styles and different things. So, it's made me a better partner. It's made me a better father. It's made me a better person in a lot of ways...” (Officer 4)

Officers often spoke about an increased mental health culture in the CEU and the WRPS during their time with the organization. Over their time within the unit, officers felt increasing openness and understanding when speaking with their coworkers and supervisors about stress. Officers primarily attributed these changes in mental health culture to changes in management and the entry of more mental health-conscious recruits into the force. A more transparent culture about the services was often discussed as reassuring regarding an officer's own use of services.

“I think there are certain people... who've moved up through the ranks and are in middle to upper management now who have a lot more of a staff care mindset.... we're out there taking care of the community, but we need to be taking care of each other as well.” (Officer 2)

“I think these days there are a lot who do access the resources. I know that initially I was really hesitant to let people know that I was doing that, but then I was talking to a few people ... I really respected ... and every one of them mentioned that they had accessed or continually access psychological resources either for specific incidents or just for ongoing maintenance and check-ins.... just hearing that from them really kind of help normalize it for me.” (Officer 2)

“I was never really one to pay attention to my mental health prior to policing, and I would say more specifically in the last seven years or so, they started putting posters on the walls, you know, just kind of with indicators that you might not be doing well mentally.” (Officer 1)

“I was highly supported. A lot of that is probably because I'm on CEU and I have a really good team, but they have done a good job, and the chief is a big proponent of wellness. So, I think it starts from the top and I think that's been a huge, huge catalyst for change.” (Officer 4)

Through the interviews, two CEU officers mentioned accessing mental health or physio services provided by the WRPS. However, three CEU officers indicated a current or previous hesitation to utilize mental health services. There was less hesitation when discussing the use of physio services due to the lesser stigma of physical ailment and injury within policing.

“I probably would be a little hesitant if I felt like I needed it.... I'm not really one to open up with complete strangers. So that might be where a little bit of apprehension comes from, but I think knowing how it can build and understanding the changes that can affect the health effects, relationship effects think knowing that a little better now. I think if I actually needed some help, I

would reach out just because I wouldn't want to see those things deteriorating, you know, affect relationships with family or friends or coworkers.” (Officer 1)

3.1.9 Eustress

Eustress is challenging to define and assess due to its possession of both objective and subjective dimensions (Section 1.3). Objectively, it is described as stress that enhances health, well-being, or performance, measurable through indicators like biometrics or productivity (Le Fevre et al., 2003; Corbett, 2015; Certo, 2003; Lussier, 2002). Subjectively, it is tied to personal experiences such as job satisfaction, happiness, and deep task engagement (Parker & Ragsdale, 2015; Simmons, 2000). In my work, eustress was deductively explored to address the construct’s inherent complexity and nuanced nature. Officers were provided a short description of Selye’s eustress and asked if it was something they had experienced. Officers then described their workplace stress experiences as a nuanced blend of various elements, including job satisfaction, coping mechanisms and stories of successful cases.

Eustress is frequently associated with tackling difficult tasks, which may come across as bittersweet, but ultimately leads to a sense of satisfaction. In addition, eustress typically involves a high level of investment or involvement, reflecting a deep engagement with the task at hand (Gong & Geertshuis, 2023). The link between eustress and workplace investment was found in previous research conducted in partnership with the unit that preceded the CEU, the Community Resource Officers (CROs), which strongly believed in the efficacy of the program for community policing and indicated a strong desire for additional training opportunities to improve their capability to work (Fenton & Anthony, 2022). While training was not discussed within the confines of the interviews in this project, CEU officers did indicate strong impact and importance in their work for the community despite its inherently challenging nature.

Additionally, eustress is characterized by healthy coping mechanisms that help individuals manage stress in a positive and productive manner. While some discussed the use of less productive strategies, such as the willful suppression noted in section 3.1.8, there was additional discussion on the utilization of the WRPS social networks as a coping strategy. There is substantial evidence that perceived supervisor and coworker support greatly reduces the

distress response (Koss et al., 2011) and therefore makes existing stress more manageable and positively appraised.

“I think there's like that old school mentality [where] you bury your feelings ... that's not the way we do things anymore. I've seen it with my own [experiences]. I've seen ... other officers that struggle. It's almost to the point where something bad happens to somebody within the service, and it's like they're almost overwhelmed [by others' support] where they can't respond to everybody because there's so many people [or services] reaching out ...” (Officer 3)

After describing the phenomena of eustress, officers were asked to reflect on their own experience with eustress within their career.

“I spent years doing outreach ... So a lot of that stuff is kind of more, I guess more you know, closer to my heart type thing as far as wanting to try and journey with people and support them and stuff, which is why this role is fantastic for me. ... like you kind of look at it beyond [criminal charges] that as far as you'd developing relationship with that person and with, you know, the neighbors and trying to figure out through how to use that relationship to try and influence in a way that hopefully keeps everybody safe and leads to a positive outcome... But it also, yeah, it does make it a little more stressful or frustrating with cases like that that drag out over long period of time.... And you, you're wanting to be able to support people, but they don't have the insight to allow you to and they're not a point of decompensation where you have authorities to force that.” (Officer 2)

Officer 1 recalled a specific case when expressing their relationship with stress in the workplace: *“Once she was in the hospital and getting treatment... It was frustrating, the process to get her to that point, but then when she was there I think it was probably a perfect example of that stress that you're talking about. And on other occasions. Sort of a similar thing where it's challenging dealing with whatever the situation may be, but the one [case] that starts to go down the right path and starts to get corrected. It [a] sense of relief.” (Officer 1)*

3.2 Survey

The survey was designed to explore the nature of the CEU's role and environment. Additionally, the survey allowed the identification of differences in the work environment between CEUs and TRAD officers that could lead to stress. Though the study had a modest sample size due to low response rates, several statistically significant results were observed. Total responses per element will vary due to the removal of missing data including skipping questions and electing not to answer.

3.2.1 Demographics & Personality Traits

Survey respondents consisted of seven CEU officers (14%) and 43 officers from other units (46%). The analysis revealed that there were no statistically significant differences between the demographic variables examined, except for relationship status. Relationship status showed a significant association with the type of officer, as determined by Fisher's exact test, which was chosen because the variable is nominal in nature. The results of a two-sided Fisher's exact test ($p = 0.04$) indicate a statistically significant relationship between the type of officer and relationship status. Among officers in a common-law relationship, all five were from TRAD, with none from CEU. Regarding marriage, there was an equal distribution between CEU and TRAD, with two officers in each unit. All six officers who were divorced or separated belonged to TRAD, with no representation from CEU in this category. In terms of officers in a relationship, the majority (30 officers) were from TRAD officers, while four were from CEU. There was one widowed officer in CEU and none in TRAD. Additionally, there were no single officers in either unit.

Since there were no statistically significance between CEU and TRAD officer demographics, the following section focuses on summative demographics that include both groups. As evident in Table 1, survey respondents were primarily male (31; 62%), with the remaining participants identifying as female (17; 34%), self-identified with an alternative label (1; 2%), or choosing not to identify (1; 2%). The largest ethnic group was White (44; 88%), followed by Black (2; 4%), Southeast Asian (1; 2%), and other (3; 6%).

As evident in Table 2, participating officers tended to be constables (34; 68%) or sergeants (11; 22%). The remaining respondents were officers in upper management positions (5; 10%). Most had university degrees (29; 58%), followed by college degrees (14; 28%) and post-graduate degrees

(5; 10%). A small percentage had no more than a high school education (2; 4%). Notably, a minimum educational requirement of a college degree was implemented in Ontario from 2019 to April 1st, 2024 (Casey & Jones, 2023). This requirement was dropped due to it being a perceived barrier in recruiting police officers when applications to the force and police college were at an all-time low (Casey & Jones, 2023). Generally, respondents to the survey had served as police officers for more than 5 years: 0-2 years (1; 2%), 3-5 years (7; 14%), 6-10 years (12; 24%), 11-15 years (7; 14%), 16-20 years (9; 18%), and 20+ years (14; 28%).

A diverse range of OCEAN personality scores was recorded in Table 5 using the BFI-10. Each subscale is scored from 1 to 5, with higher values indicating a stronger presence of the associated trait. However, as can be seen in Tables 6, there was no statistically significant difference in scores between CEU and TRAD officers. The officers had a moderate level of openness to experiences, represented by a mean score of 2.9 (SD = 0.8). This indicates that while some officers were open to new experiences and were imaginative, others were more conventional and preferred routine. Officers displayed a high level of conscientiousness with a mean score of 4.1 (SD = 0.7), suggesting that they were generally diligent, well-organized, and dependable. Notably, the conscientiousness score was the highest of all the sub-scales. The mean extroversion score was 3.0 (SD = 0.9), indicating a balance between extroverted and introverted tendencies among the officers. The high level of variability in extraversion score suggests that while some officers may be outgoing and sociable, others might be more reserved, preferring solitary tasks, or working in smaller groups. The mean agreeableness score was 3.0 (SD = 0.9). This score was indicative of a wide variety of interpersonal relationships and adaptability to different social contexts, suggesting that officers are generally cooperative, considerate, and able to work well with a diverse range of individuals. Officers possessed a slightly lower level of neuroticism, as their mean neuroticism score was 2.0 (SD = 0.9). The lower neuroticism score suggests that officers generally exhibit emotional stability and resilience under pressure, which are crucial traits for their demanding roles. Low levels of neuroticism are often associated with being calm, even-tempered, and less likely to experience negative emotions like anxiety and depression.

3.2.2 Operational & Organizational Stressors

When comparing CEU officers to traditional officers with a 2-sided Mann-Whitney U test in Table 11, a statistically significant difference was apparent in three domains: fatigue ($d = -0.5$, $U = 67.0$, $p = .03$), shiftwork ($d = -0.6$, $U = 52.0$, $p < .01$), and working alone at night ($d = -0.6$, $U = 59.5$, $p < .01$). The CEU officers had a mean fatigue score of 2.3 ($SD = 1.6$), while TRAD officers had a mean score of 4.0 ($SD = 2.1$). Also, the CEU officers had a shiftwork stress mean score of 1.4 ($SD = 1.1$), while TRAD officers had a mean score of 3.3 ($SD = 2.0$). Lastly, CEU officers had a “working alone at night”-related stress mean score of 1.0 ($SD = 0.0$), while TRAD officers had a mean score of 2.4 ($SD = 1.7$). Notably, these variables were expected to be significantly different between the groups due to their association with the 9 am-5 pm work schedule unique to the CEU officers. Due to the lack of a difference between the groups for all remaining variables across the PSQ-Op, results from CEU and TRAD officers were pooled and reported as summary statistics.

When looking at operational stressors collectively in Tables 9-10, fatigue was reported as the highest stressor, with a mean score of 3.8 ($SD = 2.1$), indicating a strong impact and variability in officer experiences. Occupation-related health issues followed closely, with a mean score of 3.9 ($SD = 2.2$), reflecting both high stress and considerable variability. Negative comments from the public also had a high mean score of 3.9 ($SD = 2.0$), suggesting this is a prominent source of stress. Not enough time available to spend with friends and family had a mean score of 3.6 ($SD = 2.0$), highlighting its considerable effect on officer well-being. Other stressors included managing social life outside of work, with a mean score of 3.2 ($SD = 2.0$), and finding time to stay in good physical condition, with a mean score of 3.4 ($SD = 1.8$). Traumatic events were reported with a mean score of 3.3 ($SD = 2.1$), showing palpable stress levels. Overtime demands and paperwork had means of 3.0 ($SD = 1.7$) and 3.1 ($SD = 2.0$), respectively, indicating moderate stress related to these factors. Shift work and work-related activities on days off had means of 3.0 ($SD = 2.0$) and 3.0 ($SD = 1.6$). Lastly, feeling like you are always on the job had a mean score of 3.3 ($SD = 4.0$), and friends/family feeling the effects of the stigma associated with your job had a mean score of 3.0 ($SD = 1.9$), indicating notable stress levels related to these factors as well.

When comparing CEU officers to TRAD officers utilizing a 2-sided Mann-Whitney U test in Table 14, there was a statistically significant difference with regards to stress caused by internal investigations ($d = -0.6$, $U = 55.5$, $p = .01$). CEU officers reported stress related to internal

investigations at a mean of 1.1 (SD = 0.1), while TRAD officers had a mean of 3.0 (SD = 4.2), which indicates a higher level of stress reported by TRAD officers. Due to the lack of a difference between the groups for all remaining variables across the PSQ-Org, results from CEU and TRAD officers were pooled and reported as summary statistics.

As displayed in Tables 12-13, the reported organizational stressor exposures have a wide range of impacts. Staff shortages emerged as the highest stressor, with a cumulative mean score of 4.5 (SD = 2.1), closely followed by bureaucratic red tape at 4.5 (SD = 2.0). Feeling like “you always must prove yourself to the organization” reported a mean score of 4.4 (SD = 1.8), while excessive administrative duties had a mean score of 4.3 (SD = 2.1). Inconsistent leadership style also showed high stress levels with a mean score of 4.3 (SD = 1.9). On the other hand, feeling that different rules apply to different people (e.g., favoritism) and constant changes in policy/legislation had means of 4.3 (SD = 1.9) and 4.0 (SD = 1.9), respectively. Moderate stressors included unequal sharing of work responsibilities with a mean score of 4.0 (SD = 2.1) and dealing with supervisors at 3.6 (SD = 2.0). Dealing with co-workers and too much computer work was reported with means of 3.8 (SD = 1.6) and 3.6 (SD = 1.8), respectively. Lower stress levels were reported due to perceived pressure to volunteer free time at 2.8 (SD = 1.9), and internal investigations at 2.7 (SD = 2.0).

3.2.3 Eustress & Distress

Varying intensities of emotional and physical states were reported on the MEDS survey elements. Due to the lack of a difference between the groups, results from CEU and TRAD officers were pooled into summary statistics. As displayed in Table 15, “I feel nervous” had the highest mean score (3.5, SD = 1.4), followed by “I sense I am energetic” (3.4, SD = 1.5). “I feel excited” and “I am ready to act!” had similar means of 3.2 (SD = 1.4) and 3.1 (SD = 1.4), respectively. “I feel alert” and “I am willing to expand efforts on my study/work” both showed moderate levels, with means of 3.1 (SD = 1.5) and 3.2 (SD = 2.1), respectively. “I feel irritated” and “I sense I am full of life” reported means of 2.9 (SD = 1.2) and 3.4 (SD = 1.5). Lower reported states included “I feel determined” with a mean score of 2.6 (SD = 1.2) and “I sense I am fatigued” at 2.9 (SD = 1.1). “I sense I am physically in shape” and “I sense I am drained” had means of 3.1 (SD = 1.5) and 3.1 (SD = 1.3). “I am not able to concentrate on my study/work” and “I cannot handle my study/work problems” reported means of 3.0 (SD = 2.1) and 3.0 (SD = 1.5).

As shown in Table 17, Subscales of Eustress and Distress showed no statistically significant differences between CEU and traditional police officers. Eustress has a cumulative mean of 2.7 (SD = 0.8), indicating a moderate level of positive stress. Distress is slightly lower, with a mean of 2.6 (SD = 0.7), reflecting a somewhat lower level of negative stress among CEU officers.

3.2.4 Social Support

There were no statistically significant differences between CEU and TRAD officers for the various social support measures. Due to the lack of a difference between the groups, results from CEU and TRAD officers were pooled. As displayed in Table 20, officers showed a high level of social support on all measures of the MS-PSS. Officers reported a very high mean score of 4.8 (SD = 0.4) on the statement, "If stranded somewhere, there is someone who would get me," indicating a strong sense of reliable social support in times of need. They also reported high mean scores on having emotional support available (M = 4.3, SD = 0.8) and having someone to help if they are physically unwell (M = 4.4, SD = 0.9), further underscoring the robustness of their support networks. Officers frequently help others when they are too busy to get everything done, with a mean score of 4.4 (SD = 0.7), which suggests a high level of willingness to assist colleagues and peers in managing their workloads. They also reported a mean score of 4.5 (SD = 0.4) for helping someone with their responsibilities when they were unable to fulfill them, highlighting their readiness to provide practical support in challenging situations. Additionally, officers frequently provide comfort to others in times of need, as indicated by a mean score of 4.3 (SD = 0.8). Police officers are often turned to for help with tasks, as reflected by a mean score of 4.3 (SD = 0.8), showing that they are trusted and relied upon by their peers. They also reported high levels of being confided in, with a mean score of 4.3 (SD = 0.9) for "People confide in me when they have problems" and 4.4 (SD = 0.7) for "People close to me tell me their fears and worries." There is a strong sense of mutual support among police officers. The mean score of 4.5 (SD = 0.8) for "There is at least one person that I can share most things with" and 4.2 (SD = 1.0) for "When I am feeling down there is someone I can lean on" indicates that officers have significant emotional support. Despite slightly lower scores, the availability of support to help fulfill responsibilities when they are unable (M = 4.2, SD = 1.0) and having someone to share most things with (M = 4.5, SD = 0.8) still reflect substantial support networks.

As displayed in Tables 23-24, officers showed a high level of social support on all measures of the 2W-SSS. They rated having an important person present when they were in need as 4.5 (SD = 0.7) and being able to share joys and sorrows with an important person similarly at 4.5 (SD = 0.7). Family support was also notable, with officers indicating that their family tried to help them, rated at 4.3 (SD = 0.9), and that they received emotional help and support from family, rated at 4.2 (SD = 0.7). Having an important person as a source of comfort was rated 4.4 (SD = 0.8). Support from friends was rated somewhat lower, with officers scoring their friends' efforts to help them at 3.8 (SD = 1.1), and their ability to rely on friends when things went wrong at 3.8 (SD = 1.0). Talking about problems with family was rated 4.0 (SD = 1.1), while sharing joys and sorrows with friends received a score of 3.9 (SD = 1.1). Officers also noted having an important person who cared about their feelings, rated at 4.3 (SD = 0.8), and that their family was willing to help with decision-making, rated 4.0 (SD = 0.9). Talking about problems with friends received the lowest rating at 3.8 (SD = 1.3).

3.2.5 Health Indicators & Behaviours

Odds ratios were calculated in R through Fisher's exact test for each self-reported health condition; however, as can be seen in Table 26, there were no statistically significant differences in odds ratios for health indicators between CEUs and TRAD officers. Cumulative prevalences were calculated using both CEU and TRAD officer responses. Among police officers, musculoskeletal disorders were the most prevalent, reported by approximately 46.7% (21/45). Anxiety disorders followed, affecting 21.4% (9 /42) of officers. Hypertension was reported by around 15.6% (7/45), while 13.3% (6/45) reported mood disorders. Gastrointestinal disorders affected 9.1% (4/44), and respiratory disorders affected 8.7% (4/46) of officers. High blood cholesterol or lipids were reported by 6.5% (3/46). No cases of diabetes were reported among the 47 officers surveyed.

There were no statistically significant differences between CEU and TRAD officers for the various behavioral health indicators, except for the rate of alcohol consumption (Table 33-35). Using a 2-sided Mann-Whitney U test, a statistically significant difference regarding the regularity of alcohol consumption between CEU and TRAD officers was observed ($d = 0.5$, $U = 212.5$, $p = .03$). Officers in TRAD tended to report drinking more frequently than those in the CEU. Neither unit reported daily alcohol consumption. Similarly, for those who drank several times per week, all 10 officers were from TRAD, with no one in this category from the CEU. The same pattern was

observed for officers who drank once per week, where all 5 officers being from TRAD. When it came to drinking a few times during the month, 12 officers reported this frequency, with 3 from the CEU and 9 from TRAD. For those who drank once during the month, all 8 officers were from TRAD. In the “not at all” category, 10 officers reported abstaining from alcohol, with 4 from the CEU and 6 from TRAD. There was no statistically significant difference in the amount of alcohol consumed per session. Across the CEU and TRAD officers, 13 officers reported drinking 1 drink per session, 20 officers consumed 2-3 drinks, 6 consumed 4-5 drinks, and no one reported drinking more than 5. One officer was unsure, and none preferred not to answer.

Tables 27-28 provide insights into police officer sleep habits. Most officers (31;66.0%) reported getting more than 8 hours of sleep per night, while 14 slept between 4 to 6 hours, and only 2 slept fewer than 4 hours. In terms of sleep difficulties, 19 officers sometimes struggled to fall asleep, or stay asleep, while 14 reported trouble most of the time, and 7 experienced it all of the time. When it came to feeling energetic in the mornings, 18 officers never felt energetic, and another 18 only did sometimes. Only 11 officers felt energetic most of the time, and none reported feeling energetic all the time.

Tables 36-38 display data on the smoking habits of officers across various substances. None of the officers reported smoking tobacco cigarettes daily or occasionally, with 22 stating they do not smoke at all and 25 indicating they have never smoked. For cigars, cigarillos, pipes, or hookah, 6 officers occasionally smoked, while 18 did not smoke, and 23 have never done so. E-cigarette use was rare, with 1 officer occasionally using them, 21 not using them at all, and 25 having never used them. As for cannabis, 2 officers reported daily use, 3 used it occasionally, 19 did not use it, and 23 never used it. No officers were uncertain or preferred not to answer for any category.

Tables 36-38 outline the usage of sedatives, anti-anxiety medications, and stimulants among officers. Regarding sedatives or anti-anxiety medications, 1 officer used them daily, 3 officers a few times during the month, 6 used them once a month, and 37 did not use them at all. Stimulant use followed a similar pattern, with 1 officer using them daily, 3 a few times per month, 6 once a month, and 37 not using stimulants at all. No officers were unsure or preferred not to answer in either category.

Tables 39-41 present data on various physical activities, including walking, sports, and other activities among officers. For walking or cycling to get to places, 26 officers reported doing these activities less than once per week, 6 did them 1-2 times per week, 5 did them 3-4 times per week, and 10 did them 5-6 times per week. Regarding sports, fitness, or recreational activities, 3 officers engaged in them less than once per week, 8 did so 1-2 times, 14 participated 3-4 times, and 22 officers were active 5-6 times per week. For other physical activities, 9 officers participated less than once per week, 18 did so 1-2 times, 9 did it 3-4 times, and 11 officers did it 5-6 times per week. None of the officers were unsure or preferred not to answer in any category.

Discussion

4.1 Interview

The findings from the five CEU interviews highlight the unique occupational environment and experience of these officers. The following discussion will contextualize these findings within the broader literature on work-related stress in police, the role of community policing, and the implications for officer well-being.

4.1.1 The Physical Environment

Collectively, CEU officers described a shift in the workplace environment and the nature of their work when joining the CEU, moving from the fast-paced, reactive stress of patrol to a longer term/more open ended (or something like that) systemic frustration with systems available to help those community members most in need. The complex nature of CEU cases, which often involve mental health, addiction, and homelessness, contributed to experiences of stress. Officers expressed feeling both a sense of accomplishment when they can help, but also frustration due to the chronic challenges of many of their cases. Extended involvement and efforts, coupled with the persistent challenges of addressing deeply rooted social problems, contribute to a different occupational environment that is less about immediate danger and more about frustration with systemic inadequacies. Since this unit is community-based and less driven by immediate/urgent legal infractions, CEU officers often felt like they had more variety, flexibility and self-efficacy compared to other units. This flexibility and self-efficacy allowed CEUs to participate in better mental health habits. For example, the increased flexibility and autonomy of CEU work was described as having a direct influence on an officer's diet, water consumption, and mental health breaks and unit supports. Importantly, a relationship between perceived flexibility and improved health behaviors in the workplace is supported in current occupational literature. For instance, longitudinal studies of pharmaceutical employees have shown that increased perceived flexibility was associated with increased sleep, physical activity, and practicing personal resilience techniques (Grzwacz et al. 2007). In correlational studies, high self-efficacy is associated with problem-solving coping styles among nurses (Li et al., 2014). Theoretically, self-efficacy moderated the effects of stress by allowing nursing staff to adopt effective coping strategies for stress (Li et al., 2014). Therefore, enhancing

workplace flexibility and self-efficacy among more traditional police units may improve physical and mental health behaviours throughout the force. Outside first responder occupations, employees who experience higher autonomy report reduced anxiety and depression (Wan, et al., 2024), in addition to health conditions such as cardiovascular disease (Wheatley, 2017). Increased paperwork and scrutiny come alongside the CEU case complexity. The paperwork was directly linked to increased sedentary behavior during work hours and CEU officers linked this increase in sedentary behavior to musculoskeletal pain. Within the literature, sedentary behavior reduces muscle activation by limiting movement and physical exertion (Hwang et al., 2022), leading to decreased stimulation and engagement of muscles over time (Park et al, 2020). The reduction in muscle activation causes a decrease in muscle size and strength (Bogdanis, 2012; Thivel et al., 2018), which has been linked to increased risk of injury due to lack of balance (Horlings et al., 2008) and joint pain (Steultjens et al., 2001) akin to what has been reported by the CEUs. Furthermore, prolonged sedentary behaviour, like that experienced by the CEUs, raises the risk of cardiovascular disease, type 2 diabetes (Biswas et al., 2015), obesity (Chau et al., 2012), and cognitive impairment (Voss et al., 2014). While none of these conditions were reported directly in association with the CEU, there is potential increased long-term risk due to increased sedentary behaviour.

4.1.2 CEU Culture

There is a growing culture of mental health awareness and support within the unit that may be related to the increasing mental health needs of CEU cases. Indeed, organizational culture can be highly influential in officer mental health services use (Burns, & Buchanan, 2020). Traditionally, masculine police culture created a stigma around emotional expression and care-seeking behaviours (Berg et al., 2006). Due to the perceived stigma associated with elective use of mental health services, there was an increased reluctance to utilize these services despite their perceived need (Tomasulo, 2015; Berg et al., 2006). CEU officers identified less reluctance to access these services due to an increased sense of mental health support within their unit, and they reported that mental health and wellness have become more of a priority identified by senior leadership. Police officers are often trained to suppress their emotions as a means of maintaining control and professionalism in high-pressure situations (Blumberg et al., 2019). This training emphasizes the importance of emotional restraint to ensure that officers can make rational decisions and effectively manage potentially volatile

encounters (Blumberg et al., 2019; Barber, & Gratwiche, 2009). Officers are taught to prioritize calmness and composure, minimizing emotional reactions that could cloud their judgment, or escalate conflicts. This emotional suppression is reinforced by a culture that values toughness and resilience, where showing vulnerability is often seen as a weakness (Miller, 2021). This has a direct impact on how officers handle and communicate stress, as few officers display pent-up emotions from tragic events or daily stressors with fellow officers or support services made available to the police force (Pogrebin & Poole, 1991; Porter et al., 2024). The emotionally repressive nature of policing culture and training makes stress even more difficult to measure through the presence of self-reporting bias, where individuals might unconsciously misreport their experiences to align with their internal narrative of emotional control. This makes obtaining reliable data on eustress and distress difficult, as the responses may not accurately reflect the individual's experiences. While interviews indicated eustress and increased openness among CEUs compared to before, potential hesitation to discuss stress likely reduced the reported levels of both distress and eustress. Further research is needed to explore the nuances of the eustress-distress paradigm within traditional and community-based policing models to fully understand the impacts of distress and eustress given these complexities.

4.1.3 Intra-organizational dynamics

Political pressures, increased scrutiny, and intra-organizational dynamics were further reported to compound stress in this unique workplace environment. While the loose mandate of the CEU allows for strategic adaptation to fit community needs, it also leads to the potential for their roles to be driven by external and intra-organizational politics. Due to frequent adaptation of the CEU mandate, CEU officers are likely experiencing constant underlying stress due to multiple organizational transitions. The predecessor to the CEU focused on specific communities or locations prone to 9-11 call rates. This approach utilized open information sharing between the CEUs, community members, and various services about issues, including community member health needs. The Personal Health Information Protection Act (PHIPA) was legislated in 2004 (Government of Ontario) and governs how personal health information is collected, used, and disclosed in health sectors. PHIPA balances the right to patient privacy with the need for healthcare providers to access and share information. This added significant complexity to sharing such information between organizations. In response, the CEU evolved to a case-based approach to aid individuals with high

service needs. This shift in approach allowed the CEUs to more easily navigate information sharing and consent. The CEUs now use a combination of location and individual-based approaches due to increased 9-11 calls from locations or communities such as homeless encampments during the pandemic or the Somali community throughout the BLM movement. In addition, recent changes in the CEU role were felt to have resulted in a sense of instability by the CEU officers. As discussed in section 3.1.4, additional responsibilities are often allocated to the CEU due to the removal or restriction of units, such as the SRO program. In one systematic review, organizational change was positively associated with elevated mental health risks in both cross-sectional and longitudinal studies (Bamberger et al., 2012). According to the study, mental health problems were limited to studies that measured these issues using validated scales or diagnoses made by mental health professionals. Elevated risk of mental health problems was observed in 11 out of 17 studies assessing the impact of these organizational changes. Factors like job insecurity, loss of control, and role ambiguity were common during organizational change. Despite experiencing some of these challenges, CEU officers report benefits such as improved work-life balance and a stronger sense of purpose in their work.

The findings suggest that community policing programs and models could be adapted to better support officers in these roles. This could involve rethinking how community policing units are structured/ implemented, how officers are trained, and how success is measured. In leveraging the eustress-distress paradigm, community policing programs could be designed to maximize eustress while minimizing distress, creating a work environment that fosters positive challenges and a sense of accomplishment. While strategic changes in these programs could take many forms, such change usually begins with adjusting program mandates. As noted, the CEU's 'loose' mandate, which allows for strategic flexibility, also leaves the unit vulnerable to external political pressures and role ambiguity. In response, the WRPS could establish clear guidelines and support mechanisms to help CEU officers navigate these pressures. This may involve setting clear unit objectives that balance community needs with CEU capabilities and capacity, providing training on managing external pressures, and supporting officers when navigating complex political and organizational dynamics. By focusing on long-term relationship-building and problem-solving as indicators of success, rather than immediate results, police departments can create more sustainable and effective community policing models that benefit both officers and the communities they serve.

There is potential for expanding this approach of internal organizational change to more traditional policing approaches. The contrast between the reactive nature of patrol work and the proactive, relationship-focused approach of the CEU underscores the need for police departments to balance these two aspects of policing. Ensuring officers have opportunities to engage in both types of work could help mitigate the stress associated with each and provide well-rounded policing experiences. This balance could be achieved through cross-training, rotational assignments, or the creation of hybrid roles that incorporate elements of both reactive and proactive policing. The CEU currently operates as a rotational assignment with officers from other units able to experience the CEU for a 3-4 year contract position. Additionally, officers entering the WRPS go through a rotational training period and get the chance to experience the CEU for approximately one week. In previous research conducted by members of our research team, CEU officers stated that rotation through the unit was highly beneficial for officers of other units to understand the CEU's role and know of community services that could be recommended to civilians looking for aid (Fenton, & Anthony, 2022). The additional resources and experiences may change the habits and mindsets of officers in traditional units when dealing with complex cases. Adapting organizational structures and protocols to implement CEU features in other units may also aid the mental and physical health of officers. Primarily, the increased flexibility and autonomy experienced by officers in the CEU environment improved work-life balance. Additionally, the improved collective mental health awareness of the CEU staff and management allowed officers to be more open and active participants in their mental health. While fully implementing these CEU features into patrol may not be possible (something about this being a significantly more costly approach to policing), strategies for improving flexibility and mental health awareness, even in a limited fashion, may benefit officer health.

Due to the increased complexity of the cases experienced by the CEU, officers regularly observed gaps in community services. These gaps were often discussed as a symptom of a service silo mentality in which specific service mandates limit organizations' ability to provide holistic aid to those in need. While this is inherently a struggle many communities face, the CEU officers are in a prime position to collaborate with community services to address these service gaps. Whether on an individual basis or at the organizational level, CEU staff and the WRPS may be able to discover and record instances of missing service provision and use these observations to provide guidance to

relevant local communities, services, and political organizations. This could result in a more holistic social service network and subsequently reduce the stress experienced by CEU officers and the police collectively.

4.1.4 Eustress

As discussed in sections 1.3 and 3.2.3, eustress encompasses a dual perspective that warrants further exploration. Historically, eustress is described as stress that fosters employee health, well-being, or performance—suggesting an objective dimension measurable through health indicators, biometrics, or productivity metrics (Le Fevre et al., 2003; Corbett, 2015; Certo, 2003; Lussier, 2002). Conversely, eustress is linked to subjective experiences such as job satisfaction, happiness, and deep task engagement (Parker & Ragsdale, 2015; Simmons, 2000). The intersection of these perspectives highlights the complexity of defining and studying eustress within occupational settings. It is essential to consider both the tangible, measurable outcomes and the intangible, personal experiences to fully understand how eustress operates as a potential mediator of stress and performance in alternative policing environments like the CEU.

4.2 Survey

The survey was used to leverage the format's convenience for officers to complete regardless of environment. Additional benefits of the survey include standardized measurement, cost-effectiveness, and the ability to gather self-reported insights into individual health and stress experiences. The survey results, while insightful, are constrained by the small sample size of CEU officers. The relatively small proportion of CEU officers presents challenges in drawing conclusions when comparing groups. Despite these limitations, some notable findings emerged that warrant discussion.

Most participants were male, white and held at least a college degree. These demographic trends align with broader trends in law enforcement demographics (Saini, 2021; Statistics Canada, 2024; Statistics Canada, 2014). The lack of significant differences in personality traits between CEU and TRAD officers is consistent with the understanding that both groups undergo the same training and selection processes upon entry to the WRPS, which likely standardizes certain personality attributes necessary for police work. This lack of difference may indicate that personality-based

interventions may be equally effective across CEU and traditional policing units. The high conscientiousness and lower neuroticism scores observed among both groups of officers are particularly notable, as these traits are advantageous in managing the demands of police work (Marcovici, 2018). However, the balance between extroversion and introversion suggests diversity in interpersonal styles within the force, which could influence team dynamics and communication styles (Matcht et al., 2014).

The findings related to operational and organizational stressors highlight key areas of concern. Given the more traditional work schedules of CEU officers (typically 9 am-5 pm, 5 days a week) vs. the shiftwork styled scheduling of the rest of the force, statistically significant differences in stress related to fatigue, shift work, and working alone at night between CEU and TRAD officers are not surprising. The lower stress levels associated with operational factors, such as fatigue and shift work, underscore the need for targeted interventions to manage these stressors in the traditional policing population. Tailoring support programs to address these stressors in traditional policing units could improve officer well-being and job performance. Sleep hygiene education, on-duty napping interventions, and fatigue countermeasure training have improved officer sleep quality in various agencies (James et al., 2023). While overnight shiftwork is necessary within FR occupations, improving the reliability of shiftwork schedules can help police officers establish regular sleep patterns.

For both CEU and TRAD officers, data indicate high stress levels due to staff shortages, bureaucratic red tape, and the feeling of constantly needing to prove oneself both within and outside the organization. These organizational stressors rank among the top five most impactful, consistent with findings from previous research originally establishing the PSQ scales (McCreary, Fong, & Groll, 2017). These organizational stressors are critical, as they can contribute to long-term job dissatisfaction, mental health challenges, and resignations due to burnout. Organizational changes could be utilized to reduce administrative burdens, ensure equitable treatment, and improve leadership consistency. The high variability in stress levels related to factors like public perception and health issues suggests that these are impactful, yet unevenly experienced stressors, possibly influenced by individual differences in coping mechanisms and resilience (Schäfer et al., 2020, Raper

et al., 2024). Further research on differential coping strategies is necessary to determine which approaches are most effective at reducing stress related to these occupational exposures.

The findings on eustress and distress reveal that all officers experience moderate levels of both positive and negative stress, suggesting that both groups perceive similar stress responses in their roles. The moderate levels of eustress indicate that while some stress may be beneficial in keeping officers alert and motivated, the accompanying distress levels highlight the potential for negative impacts on well-being. The relatively high scores for feeling nervous and drained suggest that officers may frequently operate under conditions of heightened tension (McCreary, & Thompson, 2006), which could affect their overall mental health over time. The delicate balance between eustress and distress within the policing population may warrant interventions that enhance the positive aspect of stress while mitigating its potential harm.

The high social support reported across both CEU and TRAD officers is a positive finding. Social support is a crucial buffer against stress, and the strong networks described by officers likely play a significant role in their ability to cope with the demands of their work. The consistent availability of emotional and practical support from peers suggests a well-developed support system within the force. These support systems could be leveraged to improve officer well-being further through increasing peer support programs, mentorship opportunities, and team-building activities.

The health indicators reveal concerning prevalence rates for musculoskeletal and anxiety disorders among officers. While no obvious differences were found between CEU and TRAD officers, the overall health profile suggests that law enforcement work poses considerable physical and mental health risks. The reported challenges with sleep, combined with moderate alcohol consumption and low levels of physical activity beyond routine walking or cycling, point to areas where lifestyle interventions could be beneficial.

Given the physical and psychological demands of police work, promoting healthier behaviours, such as increased participation in recreational physical activities and better sleep hygiene, could help mitigate some of the health issues identified. The minimal use of substances such as sedatives and stimulants is encouraging, indicating that officers may rely on non-pharmacological methods (e.g. exercise) to manage stress and maintain alertness. However, this low rate of substance

use may be an underestimate due to social desirability bias and the potential fear of compromised anonymity (Witkowski et al., 2024).

This research contributes to law enforcement and occupational health research by providing a nuanced understanding of the unique and varied environments that police officers experience. By identifying the occupational factors contributing to officers' stress responses, this study can inform tailored interventions that address the needs of different policing environments. Moreover, the findings can enrich the occupational stress literature by highlighting the importance of individual differences in resilience and stress management. This offers a potential mechanism to enhance employee well-being and job performance in high-stress professions such as policing. This study is a foundation for future studies exploring the longitudinal impact of these workplace environments and targeted interventions, ultimately leading to the development of evidence-based strategies to improve law enforcement personnel's mental and physical health.

Implications

The unique work environment of the CEU offers important lessons for broader policing practices. By recognizing the specific challenges and opportunities of community policing roles, police departments can develop strategies to enhance officer well-being, improve job satisfaction, and create more effective community policing models. These implications are crucial for optimizing occupational performance and ensuring that officers are well-equipped to serve their communities in meaningful and sustainable ways.

Given the CEU's unique environment, it is necessary to implement tailored mental health aids and interventions. Due to the widespread use of traditional policing approaches, police stress management techniques have been designed for high-intensity, immediate-response scenarios, such as critical incident stress management (Hammond, & Brooks, 2001). Additionally, therapists working with police officers may be more likely to use PTSD, or trauma-based models due to their prevalence in traditional policing units. This may not be effective for officers dealing with the prolonged, complex challenges faced in community policing units such as the CEU. Interventions such as cognitive-behavioral therapies could help mitigate the long-term effects of continuous exposure to difficult cases. However, more research into the effectiveness of varying mental health approaches within this population is necessary to determine their effectiveness.

While the current interviews indicate sustained improvement in the mental health culture of the WRPS, a continued effort to create a culture of care is crucial. The continuation of programs such as regular mental health check-ins, psychological support services, and destigmatization of mental health care provide officers with various resources necessary for a healthy workforce. Units, such as the CEU, should have access to confidential, ongoing mental health care to address the gradual accumulation of stress that officers experience. By continuing to normalize the use of such services, organizations can encourage officers to seek help before mental health conditions, like burnout or anxiety disorders, fully manifest. As indicated by the CEU officers, changes in leadership that prioritize officer wellness have had positive effects on the openness and acceptance of mental health services. Ongoing efforts should focus on fostering a supportive, transparent culture where officers feel empowered to access available resources without fear of stigma. Leaders should actively promote mental health initiatives and recognize the challenges faced by officers in alternative units.

The increased sedentary time and musculoskeletal strain reported by CEU officers in interviews highlight the need for improved physical health programs. Incorporating regular physical activity, ergonomic assessments, and injury prevention programs could reduce physical health risks such as back pain and cardiovascular strain. Given the links between physical and mental health, addressing these physical stressors could also help improve overall well-being and job performance.

The experience of the CEU highlights essential strategies for enhancing policing practices. By addressing the unique challenges of community policing, departments can improve officer well-being and job satisfaction. Implementing tailored mental health interventions and fostering a supportive culture where seeking help is normalized is crucial. Additionally, prioritizing physical health through exercise and injury prevention can enhance overall wellness. Focusing on both mental and physical health equips police organizations to better support officers in effective community service.

Conclusion, Limitations & Mitigation Strategies

This thesis offers a snapshot of the unique workplace environments and subsequent experiences faced by officers in the CEU of the WRPS compared to those in traditional police units. The unit's focus on high-needs community members presents distinct stressors that can significantly impact the health and well-being of these officers. The CEU officers experience prolonged, chronic stress due to their continuous/sustained interactions with high-needs individuals who they are often unable to help as much as they would like to. The nature of this work can lead to burnout and moral distress, especially when they encounter situations where outcomes are not favorable or unsolvable for the community members they serve. The work environment for CEU officers also contributes to their unique stress profile. A structured work schedule allows CEU officers to experience lower fatigue levels and reduced stress associated with working alone at night. In contrast, TRAD officers often deal with unpredictable hours and circumstances, which can exacerbate their stress levels. The study highlights a significant need for tailored support systems that specifically address the challenges faced by CEU officers. Recommendations for improving their well-being include enhancing mental health resources, providing opportunities for decompression and reflection after challenging interactions, and establishing clearer mandates and expectations to mitigate feelings of moral distress. Additionally, the findings reveal that TRAD officers reported higher stress related to internal investigations. This suggests that while CEU officers face unique stressors in their roles, traditional policing also comes with its own set of significant challenges that require attention.

Overall, this thesis underscores the necessity for police services to develop policies and support mechanisms that cater to the specific needs of alternative policing units like the CEU. By focusing on these tailored support systems, police services can enhance officer well-being and improve their capacity to serve vulnerable populations effectively. Continued research into the health impacts of alternative policing roles is crucial. Gaining a deeper understanding of the unique stressors faced by these officers can help inform training, resource allocation, and support systems that promote resilience and mental health. These findings shed light on the intricate dynamics of stress in alternative policing roles and emphasize the importance of addressing mental health and well-being in non-traditional police settings. By tailoring support to the specific needs of CEU officers, police

services can foster a healthier work environment that benefits both officers and the communities they serve.

While the CEU interview provided data regarding the CEU stress experience compared to prior experiences in other units, it can be difficult to conceptualize the baseline or standard stress profile before entering the CEU. This is especially true due to the wide range of occupational experiences that officers might have had before joining the CEU. Luckily, all officers had a common experience of being on patrol, establishing a common experience that could be referenced. This acted as a comparator throughout the interviews and was a key reference point during reflection.

Social desirability bias can affect both interviews and surveys with police officers, influencing the accuracy of the data collected. In interviews, the presence of an interviewer may prompt officers to tailor their responses to align with perceived expectations or organizational values, underreporting socially undesirable behaviors like misconduct or high stress levels. Similarly, surveys, even when anonymous, may be influenced by concerns about confidentiality or identification, leading respondents to downplay sensitive issues and emphasize socially acceptable traits such as resilience. As a result, both methods risk producing skewed data that may not fully capture the realities of officers' experiences and behaviors.

The concept of eustress, which refers to positive stress that can enhance performance and personal growth, is inherently challenging to define and measure. Unlike distress, which is easier to identify due to its negative impact, eustress often blurs the line between positive motivation and harmful pressure. This complexity makes it difficult to capture in a clear, objective way. This challenge becomes even more pronounced when attempting to distinguish between two relatively similar occupations drawn from the same population. To better differentiate the defining occupational features or environments that foster eustress, it may be necessary to compare different populations or occupations. Comparing individuals from different fields with distinct work environments and stressors could help identify the specific occupational features or environmental factors that contribute to the experience of eustress. This broader comparison may make it easier to pinpoint what truly differentiates eustress from distress and clarify how certain environments or job characteristics foster a more positive stress response.

The survey allowed researchers to directly compare CEU and non-CEU officers. However, due to the small number of CEU officers, statistical analysis was challenging. For instance, a class imbalance is inherent to this data as TRAD officers are standard within the police force while nontraditional units tend to be a minority. While division into all different units would reduce the potential group size imbalance, it would involve the analysis of 20-30 separate units with approximately 5-30 officers in each, which may lead to statistical power issues and further analytical complexity. Hence, a traditional vs CEU grouping approach was taken. Due to the constraints of the CEU sample size, equal variance across CEU and TRAD officers was assumed for each variable measured. While this allowed us to assess the nature of each variable distribution, there may be an unknown difference in variable variance between CEU and TRAD officers. The only potential solution would be to increase the overall sample size by including additional organizations with similar alternative policing units. However, because these policing units vary in purpose and role, this approach could introduce further heterogeneity in the sample's experiences.

There was limited prior information about the characteristics of the CEU and TRAD officers in the sample. Specifically, the means, standard deviations, and effect sizes were unknown, which are essential for estimating an appropriate sample size. Without these parameters, accurately determining the number of participants needed to achieve statistical power was not possible, as the required sample size varies with effect size. While statistical significance testing wasn't the direct goal for this study, it was a tool to assess potentially important differences between CEU and TRAD officers. This study was potentially underpowered due to the relatively small sample size, which limited the ability to detect meaningful relationships between variables. As a result, statistical testing should be interpreted cautiously, since differences may either be missed (Type 2 error), or overemphasized (Type 1 error). When variables did show significance despite the small sample, they may represent observational differences with large effect sizes, potentially overlooking more nuanced differentiating factors that the sample could have revealed.

The survey scales were chosen for their brevity and reliability. While most of the selected scales demonstrated strong reliability, the BFI-10, which measures personality traits, had only moderate reliability in exchange for its short length (Balgiu, 2018; Rammstedt & John, 2007). This suggests that the results derived from the BFI-10 should be interpreted with some caution. It is

important to consider the level of reliability reported for this scale in other studies, such as those by Flood (2022), to ensure that its limitations appropriately temper conclusions drawn from this measure

While we cannot directly compare the survey and CEU interview data, they can be analyzed concurrently to compare the previous experiences of CEU officers and the prior experiences of other service members. Utilizing an embedded mixed methods approach, we can address questions about stress in the force and look at the unique perspective of the CEU officers. Additionally, this mixed methods design helps independently mitigate the limitations of quantitative, or qualitative approaches alone. However, the use of an embedded design approach can also make integrating quantitative and qualitative analysis into one discussion difficult. Therefore, it was necessary to clearly state and describe when quantitative and/or qualitative information is relevant to a given topic. At this stage in the research, stating that connections between qualitative and quantitative analyses are primarily speculative is imperative due to the differing methodologies. Qualitative analysis delves into subjective interpretations to capture the nuances of human experience and context. In contrast, quantitative analysis relies on numerical data and statistical techniques to establish objective patterns and correlations. While integrating these methodologies can enhance our understanding of the CEU experience, carefully considering their distinct epistemological foundations is required to avoid oversimplifying or misrepresenting their findings. The fundamental difference in these approaches can lead to varying interpretations of the same phenomenon, making it crucial to acknowledge that any proposed connections at this point may lack empirical support.

The study highlights the balance of eustress and distress in the CEU's unique work environment. Future research should explore ways to promote eustress and reduce distress across diverse FR roles. Longitudinal studies can track how stress evolves over time and during transitions, while broader sampling could identify role-specific challenges. Experimental studies should test interventions like resilience training, mindfulness, and peer support for their impact on FR well-being and performance. Advanced tools, such as tailored versions of the MEDS, could improve stress measurement. Qualitative research should examine how FRs find purpose despite moral dilemmas, and intersectional approaches can ensure inclusive support strategies. Lastly, wearable technologies tracking stress indicators could provide real-time data to guide interventions, advancing our understanding and support of FR health and effectiveness.

Research Contribution

It is essential to consider the community-policing movement's impacts on officer health and well-being. Academic research is scarce on community policing and its impact on officer health due to its relative novelty and “slow-paced” nature; however, with increasing external pressures for police reform, there have also been slow and steady increases in alternative-policing programs (Ekici et al., 2022). Simply because these programs are perceived to be "slow-paced" by officers of other units compared to conventional policing does not negate the potential impacts of chronic stress. My efforts to establish a CEU phenotype will help to lay a foundation for specific health conditions and stressors in alternative policing units that can be researched. A better understanding of sources of police stress, including occupational structures, will promote the evidence-based development of organizational policies, such as resource accessibility and stress reduction programs. Furthermore, this research will provide valuable baseline data, including average values and effect sizes, allowing future researchers to design studies with a stronger foundation to assess and address these issues.

A continuation of this work might investigate biological measures of stress and could be incorporated to measure the physiological impacts of stress directly. Additionally, a unit-by-unit analysis could be conducted to holistically understand how organizational structures impact all officer positions. This would require a much larger sample than one municipal police force could provide. Therefore, future research conducting a unit-by-unit analysis would likely involve multiple municipalities and potentially federal police organizations.

Potential applications of this research extend beyond the study scope as police officer stress affects absenteeism, decision-making, and use of force (Violanti et al., 2014; Verhage et al., 2018). Economic impacts of officer stress include employee turnover, mental health leave, and worker compensation (Randall, 2013). The effect of stress stemming from organizational police structures is multifaceted and understudied. Currently, it is not easy to evaluate the potential costs to the system both economically and in community perception due to this gap in the literature. Thus, this study provides the basis for informed organizational decision-making regarding officer health, stress reduction policy, funding allocation and community perception initiatives.

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Appendix A: Recruitment Materials

Survey email recruitment

This email is being sent out on behalf of the University of Waterloo WRPS research team.

Hello ____,

My name is Arden Fenton. I am a student researcher from the University of Waterloo who is conducting research on sources of occupational stress within, and outside of alternative policing models and their impact on officer health. Because of your affiliation with the WRPS, we would love to get a better understanding of your experience within the workforce.

Please note: Your identity in this survey will be completely confidential. **Any other personal information will not be tied to your responses.**

Participation in this study is voluntary and consists of an online survey of approximately 10-15 minutes in length. You may decline to answer any of the survey questions without negative consequence. In addition, you may decide to withdraw from this study at any time and without any negative consequences.

Click here for the link to participate.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 45012).

If you have any questions or concerns, please contact Student Researcher, Arden Fenton, at Agfenton@uwaterloo.ca or (226) 201-2462. You may also contact the Research Supervisor, Dr. Kelly Anthony, at **Kelly.anthony@uwaterloo.ca** or 519-888-4567 ext. 42802.

Thank you for your time,

Arden Fenton

Phone number: (226) 201-2462

Email: agfenton@uwaterloo.ca

Candidate for MSc public health and health systems, University of Waterloo

Interview email recruitment

This email is being sent out on behalf of the University of Waterloo WRPS research team.

Hello CEU Officer,

My name is Arden Fenton. I am a student researcher from the University of Waterloo who is conducting research on the Waterloo Region Police Service's Community Engagement Unit (CEU). Because of your affiliation with the CEU, we would love to get a better understanding of your experience within the workforce.

Because of your unique experiences with the CEU, we would like to formally invite you to participate in an interview. Within this study, exploratory interviews are being conducted to describe the unique work environment of the CEU and assess its effects on occupational stress. It is our belief that your experience with the program makes you well suited to provide information and feedback which will help inform an academic description of the program's activities, successes, and critiques. The data collected during these interviews will contribute to a better understanding of the impacts of alternative policy models such as the CEU and the impacts such models can have on the workforce itself.

Participation in this study is voluntary and consists of an online or telephone interview of approximately one hour in length. You may decline to answer any of the interview questions without negative consequence. In addition, you may decide to withdraw from this study at any time and without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate collection of information and transcription for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish.

This email is being sent out on behalf of the researchers. If you would like to participate in this study or if you have any questions or concerns, please contact me at agfenton@uwaterloo.ca (email) or (226) 201-2462 (phone number) with your availability. This study has been reviewed and

received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 45012).

Thank you for your time,

Arden Fenton

Phone number: (226) 201-2462

Email: agfenton@uwaterloo.ca

Candidate for MSc public health and health systems, University of Waterloo

Appendix B: Consent Materials

Survey Consent letter

Impacts of Alternative Policing on Officer Physiological Health: The Community Engagement Unit (CEU)

Thank you for your interest in participating in the "Differential occupational stress in Community Resource Officers - Health impacts on staff in alternative police models". This survey should take approximately 15-20 minutes to complete. Please read the consent form below before completing the following survey.

My name is Arden Fenton. I am a Master's student from the School of Public Health Sciences at the University of Waterloo who is conducting research on sources of occupational stress within traditional and alternative policing units, and how such stress can impact officer health. Because of your affiliation with the WRPS, we would love to get a better understanding of your experience within the workforce.

About Occupational Stress and Alternative Police Units in the Waterloo Region Police Service

The 'Community Engagement Unit' (CEU) has been a part of the Waterloo Regional Police Service (WRPS) for over 25 years. CEU officers serve at-risk community members within the Waterloo region by providing connections to community resources, and by acting as a familiar point of contact for those facing persistent issues. As an alternative policing model, the CEU is a unique work environment that likely presents occupational stressors different from other units. With alternative policing models rising in popularity, more research is needed to assess the effects such models can have on the workforce itself.

About this Study

This survey is being conducted as part of a Master's thesis that aims to examine the unique work environment of the CEU (as a representation of alternative policing), particularly with regards to occupational stress. You have been invited to participate in this survey because your experience with the WRPS makes you well-suited to help us better understand the CEU as a unique work environment.

Participation in this study is voluntary and consists of an online survey that will last approximately 15-20 minutes. Agreeing, or declining to participate will in no way affect your standing relationship with involved organizations (i.e., University of Waterloo, or Waterloo Regional Police Service).

You may decline to answer any of the survey questions without negative consequence. In addition, you may decide not to complete the survey at any time without any negative consequences. Also, you may withdraw after submitting the survey by emailing agfenton@uwaterloo.ca and providing the randomly generated ID number provided within the survey. Please note that there is no time limit to withdraw your data after survey submission.

Demographic information such as age, or ethnicity will be requested as part of participation in order to assess themes, or patterns related to these factors. Importantly, all information provided will be de-identified whenever findings are discussed in order to protect participant privacy.

Data collected during this study will be securely stored by the supervising faculty members in a password-protected computer and retained for a minimum of 7 years. Only researchers associated with this project will have access to data.

Any findings, including lifestyle and health information, will be shared with the WRPS as summative statistics. **No individual level data will be shared with the WRPS.**

You will be completing the study by an online survey operated by Qualtrics. Qualtrics has implemented technical, administrative, and physical safeguards to protect the information provided via the Services from loss, misuse, and unauthorized access, disclosure, alteration, or destruction. However, no Internet transmission is ever fully secure, or error free.

Resources

You may feel uncomfortable, or anxious when reflecting on past experiences. These feelings are normal and should be temporary. If, during or after this survey, you experience persistent uncomfortable or negative thoughts or emotions related to any aspect of the study, you are encouraged to immediately contact the Distress Centre of Waterloo Region: 1-866-366-4566 (toll

free); 1-519-744-1813 (crisis).

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Board (REB 45012). If you have questions for the Board, contact the Office of Research Ethics, toll-free at 1-833-643-2379 (Canada and USA), 1-519-888-4440, or **reb@uwaterloo.ca**.

For all other questions, or if you would like additional information to assist you in reaching a decision about participation, please contact the Student Researcher, Arden Fenton, at (226)-201-2462, or by email at Agfenton@uwaterloo.ca. You can also contact either of the Research Supervisors: Professor Kelly Anthony at 519-888-4567 ext. 42802, or email **Kelly.anthony@uwaterloo.ca**, or Professor John G. Mielke at 519-888-4567 ext. 48606, or email jgmielke@uwaterloo.ca.

I hope that the results of this study will be of benefit to future CEU officers, the WRPS, as well as to the broader research community. I very much look forward to seeing your responses and thank you in advance for your assistance with this project.

Yours Sincerely,

Arden Fenton

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Professors Anthony and Mielke, and their student researcher (Arden Fenton) from the Faculty of Health at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and to request additional details.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Board (REB 45012). If you have questions for the Board, contact the Office of Research Ethics, toll-free at 1-833-643-2379 (Canada and USA), 1-519-888-4440, or **reb@uwaterloo.ca**.

For all other questions, please contact either Dr. Kelly Anthony at 519-888-4567 ext. 42802,

or email **Kelly.anthony@uwaterloo.ca**, or Dr. John G. Mielke at 519-888-4567 ext. 48606, or email **jgmielke@uwaterloo.ca**.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐ Yes

☐ No

Interview Consent letter

University of Waterloo

Date: __/__/2023

Dear participant:

This letter is an invitation to participate in a study I am conducting as part of a Masters' Thesis in the Department of Health at the University of Waterloo, under the supervision of Dr. Kelly Anthony and Dr. John Mielke. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part.

The 'Community Engagement Unit (CEU) has run in conjunction with the Waterloo Regional Police Service's (WRPS) regular policing activities for 25 years. These CEU officers service at-risk community members within the Waterloo region by providing connections to community resources, as well as acting as a consistent point of contact for those facing persistent issues. As an alternative policing model, the CEU is a unique work environment that likely has different occupational stressors in comparison to other units.

With alternative policing models rising in popularity both internally and externally to the police force, little research has been done to assess the impacts such models can have on the workforce itself. It is well known that policing is a high-stress occupation with an increased risk of poor mental and physiological health outcomes.

As part of the present study, exploratory interviews are being conducted to describe the unique work environment of the CEU and assess its effects on occupational stress. You have been invited to participate in these interviews due to your active involvement in or affiliation with the CEU. Your experience with the unit makes you well-suited to provide information that will help inform an academic description of the CEU as a unique work environment.

Participation in this study is voluntary and consists of an online or telephone interview of approximately one hour in length. Agreeing or declining to participate will in no way affect your standing or relationship with your current organization. You may decline to answer any of the interview questions without negative consequences. In addition, you may decide to withdraw from

this study at any time and without any negative consequences by advising the researcher. With your permission, the interview will be audio recorded to facilitate the collection of information and transcription for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to allow you to confirm our conversation's accuracy and to add or clarify any points you wish. Demographic information such as age or ethnicity will be requested as part of participation to assess themes or patterns within these factors. All information provided in interviews will be de-identified in discussion or presentation of findings in order to protect participant privacy. With your permission anonymous quotations may be used. Data collected during this study will be securely stored by the supervising faculty member in a password-protected computer, and retained for a minimum of 7 years. Only researchers associated with this project will have access to raw data.

Participants may feel uncomfortable or anxious when discussing past experiences with or related to the CEU. These feelings are normal and should be temporary. If, during or after this interview, you experience persistent uncomfortable or negative thoughts or emotions related to any aspect of the study, you are encouraged to immediately contact the Distress Centre of Waterloo Region: 1-866-366-4566 (toll-free); 1-519-744-1813 (crisis).

When information is transmitted over the internet privacy cannot be guaranteed. There is always a risk your responses may be intercepted by a third party (e.g., government agencies, hackers). University of Waterloo researchers will not collect or use internet protocol (IP) addresses or other information that could link your participation to your computer or electronic device without informing you.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 45012). If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions or if you would like additional information to assist you in reaching a decision about participation, please contact me at (226) 201 2462 or by email at Agfenton@uwaterloo@gmail.com. You can also contact my supervisor, Dr. Kelly Anthony at 519-888-4567 ext. 42802 or email Kelly.anthony@uwaterloo.ca.

Aggregate results of this data will be shared with the WRPS in order to describe the unique work environment of the CEU and address its effects on occupational stress within their workforce. I hope that the results of my study will be of benefit to those organizations directly involved in the study, as well as to the broader research community.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Yours Sincerely,

Arden Fenton.

CONSENT FORM

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

I have read the information presented in the information letter about a study being conducted by Dr. Anthony, Dr. Mielke and Arden Fenton of the School of Public Health Sciences at the University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent at any time without penalty by advising the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 45012). If you have questions for the Committee contact the Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact Kelly Anthony at 519-888-4567 ext. 42802 or email Kelly.anthony@uwaterloo.ca.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐ Yes

☐ No

I agree to have my interview audio recorded.

☐ Yes

☐ No

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐ Yes

☐ No

Participant Name: _____ (Please print) Date: _____

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Oral Consent Log

Differential Occupational Stress in Community Resource Officers - Health Impacts on Staff in

Alternative Police Models. (for documenting oral consent obtained by telephone, online, or in person)

Participant's Unique Study ID Number or Pseudonym	Optional Interview to Survey Linking ID	Participant's Name	Date of Consent	Requested a copy of study results (Yes/No).	Where to send study results (e.g., email, mail).	Agree to audio and/or video recording (Yes/No).

Appendix C: Interview script

As part of the present study, exploratory interviews are being conducted to describe the unique work environment of the CEU and assess its effects on occupational stress. You have been invited to participate in these interviews due to your active involvement in or affiliation with the CEU. Your experience with the unit makes you well-suited to provide information that will help inform an academic description of the CEU as a unique work environment. The data collected during these interviews will contribute to a better understanding of the CEU service as an alternative model for policing and its effects on occupational stress.

Participation in this study is voluntary and consists of an online or telephone interview of approximately 30 to 45 minutes. You may decline to answer any of the interview questions without negative consequences. In addition, you may decide to withdraw from this study at any time and without any negative consequences by advising the researcher. The interview will be audio recorded with your permission to facilitate information collection and transcription for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to allow you to confirm the accuracy of our conversation and to add or clarify any points you wish.

By providing your consent, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities.

Demographics will be collected to contextualize interview questions. This interview is anonymous in that identifying information will not be linked to your responses. All information provided in interviews will be de-identified in the discussion or presentation of findings to protect participant privacy. You may change your mind and ask to have your information deleted by contacting us prior to deidentification as of July 30th, 2023. Afterwards, removing your responses will not be possible because we will have no way of knowing which data are yours. With your permission, anonymous quotations may be used.

Data collected during this study will be securely stored by the supervising faculty member in a password-protected computer and retained for a minimum of 7 years. Only researchers associated with this project will have access to data. Participants may feel uncomfortable or anxious when discussing past experiences with or related to occupational stressors. These feelings are normal and should be temporary.

The interview will be conducted over an online platform, Microsoft teams. Microsoft teams has implemented technical, administrative, and physical safeguards to protect the information provided via the Services from loss, misuse, and unauthorized access, disclosure, alteration, or destruction. However, no Internet transmission is ever fully secure or error free.

If during or after this interview, you experience persistent uncomfortable or negative thoughts or emotions related to any aspect of the study, you are encouraged to immediately contact the Distress Centre of Waterloo Region: 1-866-366-4566 (toll-free); 1-519-744-1813 (crisis).

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE# 45012). If you have any questions or concerns, please contact Student Researcher, Arden Fenton, at Agfenton@uwaterloo.ca or (226) 201-2462. You may also contact the Research Supervisor, Dr. Kelly Anthony, at Kelly.anthony@uwaterloo.ca or 519-888-4567 ext. 42802.

Consent questions:

- Do you have any questions before we begin?
- Do you consent to participate in this interview?
- Do you consent to be recorded during this interview?
- Do you consent to the use of anonymous quotations from this interview?

Demographics questions:

- What is your age?
- What is your gender?
- What is your ethnicity or cultural identity?
- What is the highest level of education you have completed?
- What is your relationship status?
- Do you have children? If yes, how many children do you have?

Police specific demographics:

- What is your rank within the WRPS?
- How many years have you been in the force?
- What other units did you work in other than the CEU service?

Core questions:

- **CEU and stress**

- Describe the most common stressors within the CEU?
- Compared to previous units, how does stress in the CEU differ?
 - Probe: How often in the CEU do you feel stressed?
 - Probe: How intense would you describe the stress associated with the CEU?
 - Probe: Describe the nature of the differences between CEU and non-CEU stressors.
- Tell me about any stressful events from work that have stuck with you for a long time?
 - Probe: How have you dealt with these kinds of events?
 - Probe:
 - Probe: Tell me about the resources to deal with these types of events?
- As you may know, some stressors can be seen as good and others seen bad, describe any good stressors in the CEU
 - Probe: For example, events that make you feel excited, fulfilled, satisfied, etc.
 - Probe: How often do you feel this kind of stress?
- **Questions regarding the CEU vs others:**
 - Within the current climate, have you felt your relationship with the public changed? If so, how?
 - Probe: How have these experiences with the public been different than other units?
 - Probe: As a CEU service member, have you experienced changing relationships with other officers outside of the CEU
 - Probe: How has diversity played a role in these relationships?
- **Health-related questions:**
 - In your experience, how has the CEU service influenced your mental or physical health?
 - Probe: Is different than other units?
 - Special Instructions: Probe in whichever direction left undressed (physical or mental)
- **Protective measures**
 - What about the WRPS makes dealing with stress at work challenging?
 - Probe: Do you believe experiencing the CEU service changes the experience of occupational stress in other departments?
 - What about the WRPS that makes dealing with stress at work easier?
- **Conduct debrief.**

Appendix D: Survey

Demographics

Gender

- | | |
|-----------------------------|---|
| ☐ Man | ☐ Prefer to self-identify |
| ☐ Woman | ☐ Prefer not to answer |
-

Sex

- | | |
|------------------------------|--|
| ☐ Male | ☐ Intersex |
| ☐ Female | ☐ Prefer not to answer |
-

Highest level of education

- | | |
|--|--|
| ☐ Highschool | ☐ Post-graduate degree |
| ☐ College diploma/degree | ☐ Other: _____ |
| ☐ University degree | |
-

Ethnic Background

- | | |
|---------------------------------------|--|
| ☐ Black | ☐ Middle Eastern |
| ☐ Caucasian/White | ☐ South Asian |
| ☐ East Asian | ☐ South-East Asian |
| ☐ Latino/Latina | ☐ Other: _____ |
-

Relationship status

- | | |
|--|---|
| ☐ Common-law | ☐ In a relationship |
| ☐ Married | ☐ Widowed |
| ☐ Divorced/Separated | ☐ Single |
-

Rank

- | | |
|---------------------------------|------------------------------------|
| ☐ Constable | ☐ Inspector |
| ☐ Sergeant | ☐ Other: _____ |
-

Years in service

- | | |
|-------------------------------------|--|
| ☐ 0 to 2 years | ☐ 11 to 15 years |
| ☐ 3 to 5 years | ☐ 16 to 20 years |
| ☐ 6 to 10 years | ☐ 20 years or more |
-

Big 5 Inventory (BFI-10)

The following segment of questions asks about general personality traits. How well do the following statements describe your personality? I see myself as someone who:

	Strongly Disagree	Disagree a little	Neither Agree nor Disagree	Agree a little	Strongly Agree
is reserved.	☐	☐	☐	☐	☐
is generally trusting.	☐	☐	☐	☐	☐
tends to be lazy.	☐	☐	☐	☐	☐
is relaxed, handles stress well.	☐	☐	☐	☐	☐
has few artistic interests.	☐	☐	☐	☐	☐
is outgoing, sociable.	☐	☐	☐	☐	☐
tends to find fault in others.	☐	☐	☐	☐	☐
does a thorough job.	☐	☐	☐	☐	☐
gets nervous easily.	☐	☐	☐	☐	☐
has an active imagination.	☐	☐	☐	☐	☐

Police Stress Questionnaire – Operational (PSQ-Op)

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 that ranges from “No Stress At All” to “A Lot Of Stress”:

	No stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Shift work	☐	☐	☐	☐	☐	☐	☐
Working alone at night	☐	☐	☐	☐	☐	☐	☐
Over-time demands	☐	☐	☐	☐	☐	☐	☐
Risk of being injured on the job	☐	☐	☐	☐	☐	☐	☐
Work-related activities on days off (e.g. court, community events)	☐	☐	☐	☐	☐	☐	☐
Traumatic events (e.g. MVA, domestics, death, injury)	☐	☐	☐	☐	☐	☐	☐
Managing your social life outside of work	☐	☐	☐	☐	☐	☐	☐

	No stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Not enough time available to spend with friends and family	☐	☐	☐	☐	☐	☐	☐
Paperwork	☐	☐	☐	☐	☐	☐	☐
Eating healthy at work	☐	☐	☐	☐	☐	☐	☐
Finding time to stay in good physical condition	☐	☐	☐	☐	☐	☐	☐
Fatigue (e.g. shift work, over-time)	☐	☐	☐	☐	☐	☐	☐
Occupation- related health issues (e.g. back pain)	☐	☐	☐	☐	☐	☐	☐
Lack of understanding from family and friends about your work	☐	☐	☐	☐	☐	☐	☐
Making friends outside the job	☐	☐	☐	☐	☐	☐	☐
Upholding a "higher image" in public	☐	☐	☐	☐	☐	☐	☐

	No stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Negative comments from the public	☐	☐	☐	☐	☐	☐	☐
Limitations to your social life (e.g. who your friends are, where you socialize)	☐	☐	☐	☐	☐	☐	☐
Feeling like you are always on the job	☐	☐	☐	☐	☐	☐	☐
Friends/family feel the effects of the stigma associated with your job	☐	☐	☐	☐	☐	☐	☐

Police Stress Questionnaire – Organizational (PSQ-Org)

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 that ranges from “No Stress At All” to “A Lot Of Stress”:

	No stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Dealing with co-workers	☐	☐	☐	☐	☐	☐	☐
Feeling that different rules apply to different people (e.g. favouritism)	☐	☐	☐	☐	☐	☐	☐
Feeling like you always have to prove yourself to the organization	☐	☐	☐	☐	☐	☐	☐
Excessive administrative duties	☐	☐	☐	☐	☐	☐	☐
Constant changes in policy/legislation	☐	☐	☐	☐	☐	☐	☐
Staff shortages	☐	☐	☐	☐	☐	☐	☐
Bureaucratic red tape	☐	☐	☐	☐	☐	☐	☐
Too much computer work	☐	☐	☐	☐	☐	☐	☐
Lack of training on new equipment	☐	☐	☐	☐	☐	☐	☐
Perceived pressure to volunteer free time	☐	☐	☐	☐	☐	☐	☐

	No stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Dealing with supervisors	☐	☐	☐	☐	☐	☐	☐
Inconsistent leadership style	☐	☐	☐	☐	☐	☐	☐
Lack of resources	☐	☐	☐	☐	☐	☐	☐
Unequal sharing of work responsibilities	☐	☐	☐	☐	☐	☐	☐
If you are sick or injured your co-workers seem to look down on you	☐	☐	☐	☐	☐	☐	☐
Leaders over-emphasize the negatives (e.g. supervisor evaluations, public complaints)	☐	☐	☐	☐	☐	☐	☐
Internal investigations	☐	☐	☐	☐	☐	☐	☐
Dealing the court system	☐	☐	☐	☐	☐	☐	☐
The need to be accountable for doing your job	☐	☐	☐	☐	☐	☐	☐
Inadequate equipment	☐	☐	☐	☐	☐	☐	☐

Measure of Emotional, Physical, and Behavioral Markers of Eustress and Distress (MEDS)

After each item, please circle how you have felt over the past 6 months, using a 5-point scale that ranges from “Strongly Disagree” to “Strongly Agree”:

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel excited.	☐	☐	☐	☐	☐
I feel determined.	☐	☐	☐	☐	☐
I feel alert.	☐	☐	☐	☐	☐
I feel nervous.	☐	☐	☐	☐	☐
I feel tense.	☐	☐	☐	☐	☐
I sense I am energetic.	☐	☐	☐	☐	☐
I sense I am physically in shape.	☐	☐	☐	☐	☐
I sense I am full of life.	☐	☐	☐	☐	☐
I sense I am fatigued.	☐	☐	☐	☐	☐
I sense I am exhausted.	☐	☐	☐	☐	☐
I sense I am drained.	☐	☐	☐	☐	☐
I am ready to act.	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am willing to expand efforts on my work.	☐	☐	☐	☐	☐
I am prepared to engage in my work.	☐	☐	☐	☐	☐
I am not able to concentrate on my work.	☐	☐	☐	☐	☐
I cannot handle my work problems.	☐	☐	☐	☐	☐
I make lots of errors in my daily work.	☐	☐	☐	☐	☐

General Health Questionnaire (GHQ – 12)

Occupational stress often shows itself within various health conditions or behaviours, however depending on the nature of stress exposure these may differ. The following segment is designed to capture these changes.

The following segment asks about "long-term conditions", which have been diagnosed by a health professional. ("long-term conditions" are those expected to last, or that have already lasted, at least 6 months)

Do you have the following:

	Yes	No	Do not know	Prefer not to answer
a respiratory disorder (e.g., asthma, chronic bronchitis, or emphysema)	☐	☐	☐	☐
a gastrointestinal disorder (e.g., gastritis, peptic ulcer, or irritable bowel syndrome)	☐	☐	☐	☐
a musculoskeletal disorder (e.g., hip pain, back pain, or hip pain)	☐	☐	☐	☐
hypertension (high blood pressure)	☐	☐	☐	☐
high blood cholesterol, or lipids	☐	☐	☐	☐
diabetes	☐	☐	☐	☐
a mood disorder such as depression, bipolar disorder, or dysthymia	☐	☐	☐	☐
an anxiety disorder such as obsessive-compulsive disorder, or post-traumatic stress syndrome	☐	☐	☐	☐

How long do you usually spend sleeping each night?

- | | |
|--|--|
| ☐ fewer than 4 hours | ☐ Prefer not to answer |
| ☐ 4 hours to 6 hours | ☐ Do not know |
| ☐ More than 8 | |
-

How often do you have trouble going to sleep, or staying asleep?

- | | |
|--|--|
| ☐ Never | ☐ All of the time |
| ☐ Sometimes | ☐ Prefer not to answer |
| ☐ Most of the time | ☐ Do not know |
-

How often do you feel “full of energy” in the morning?

- | | |
|--|--|
| ☐ Never | ☐ All of the time |
| ☐ Sometimes | ☐ Prefer not to answer |
| ☐ Most of the time | ☐ Do not know |
-

The following segment of questions asks about potential medication and substance consumption. These substances have been approved for on-duty medicinal, or off-duty recreational use within the WRPS. Each substance may be subject to its own workplace regulations. Like all questions in this survey, answering these questions is voluntary.

Over the past month, did you:

	Daily	Occasionally	Not at all	Do not know	Prefer not to answer	Never
smoke tobacco cigarettes	☐	☐	☐	☐	☐	☐
smoke any cigars, cigarillos, a pipe, or make use of a hookah	☐	☐	☐	☐	☐	☐
use an “e-cigarette” (also known as vaping)	☐	☐	☐	☐	☐	☐
smoke cannabis (marijuana) cigarettes and/or use a cannabis vaporiser	☐	☐	☐	☐	☐	☐

The following set of questions asks about your alcohol consumption.

A “drink” refers to:

- a bottle, or small can of beer, cider or cooler with 5% alcohol content, or a small draft
- a glass of wine with 12% alcohol content
- a glass, or cocktail containing 1 oz of a spirit with 40% alcohol content

Over the past month, how often did you drink alcoholic beverages?

- | | |
|--|---|
| ☐ Daily | ☐ Once during the month |
| ☐ Several times per week | ☐ Not at all |
| ☐ Once per week | ☐ Prefer not to answer |
| ☐ A few times during the month | ☐ Do not know |

If you do drink alcohol, how many drinks would you typically consume on one occasion?

- | | |
|--------------------------------------|--|
| ☐ Not applicable | ☐ More than 5 drinks |
| ☐ 1 drink | ☐ Prefer not to answer |
| ☐ 2-3 drinks | ☐ Do not know |
| ☐ 4-5 drinks | |

The next set of questions is about your use of various medications.

The first question is about your use of various pain relievers. Most of these products will require a prescription, although some (for example, Tylenol #1) may be available without one. We are not interested in pain relievers such as Advil.

During the past month, how often did you use a pain reliever (for either acute, or chronic pain)? For example, codeine products, like Tylenol #3, 292s, or 222s; oxycodone products, such as Percocet, or Percodan; other opioid products, such as hydromorphone, Dilaudid, or Demerol

- | | |
|--|---|
| ☐ Daily | ☐ Once during the month |
| ☐ Several times per week | ☐ Not at all |
| ☐ Once per week | ☐ Prefer not to answer |
| ☐ A few times during the month | ☐ Do not know |

The next question concerns the use of various stimulants. By stimulants, we mean products prescribed by a doctor to help people who have attention, or concentration problems (such as ADHD). Examples of stimulants include Ritalin, Concerta, Adderall, and Dexedrine.

During the past month, how often did you use a stimulant?

- | | |
|--|---|
| ☐ Daily | ☐ Once during the month |
| ☐ Several times per week | ☐ Not at all |
| ☐ Once per week | ☐ Prefer not to answer |
| ☐ A few times during the month | ☐ Do not know |

The final question concerns your use of various sedatives, or anti-anxiety medications. By sedatives, we mean products that can be obtained from a doctor, such as diazepam, Valium, lorazepam, Ativan, alprazolam, Xanax, clonazepam, Rivotril.

- | | |
|--|---|
| ☐ Daily | ☐ Once during the month |
| ☐ Several times per week | ☐ Not at all |
| ☐ Once per week | ☐ Prefer not to answer |
| ☐ A few times during the month | ☐ Do not know |

The following questions ask about various types of physical activities that you would have done over a recent typical week. Please consider only those activities that you did for a minimum of 10 continuous minutes.

Weather permitting, in a typical week, about how frequently would you engage in activities like walking, or cycling to get to places such as work, or a shopping centre?

- | | |
|---|--|
| ☐ Less than once per week | ☐ 5-6 times per week |
| ☐ 1-2 times per week | ☐ Do not know |
| ☐ 3-4 times per week | ☐ Prefer not to answer |

Not including the activities reported above, in a typical week, how often would you participate in sports, fitness, or recreational physical activities (organised, or non-organised) that last a minimum of

10 continuous minutes? Examples include walking, swimming, cycling, running, resistance training, and all team sports.

- | | |
|---|--|
| ☐ Less than once per week | ☐ 5-6 times per week |
| ☐ 1-2 times per week | ☐ Do not know |
| ☐ 3-4 times per week | ☐ Prefer not to answer |
-

In a typical week, how often would you complete any other physical activities while at work, in or around your home, or while volunteering? Examples include carrying heavy loads, shoveling, and household chores such as washing windows. Please remember to only include activities that lasted a minimum of 10 continuous minutes.

- | | |
|---|--|
| ☐ Less than once per week | ☐ 5-6 times per week |
| ☐ 1-2 times per week | ☐ Do not know |
| ☐ 3-4 times per week | ☐ Prefer not to answer |

Multidimensional scale for Perceived Social Support (MS-PSS)

This form asks you about the amount of support you receive from your partner, family, and friends.

For each statement, think back over the past 6 months and indicate how much you disagree, or agree.

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
There was an important person who was around when I was in need.	☐	☐	☐	☐	☐
There was an important person with whom I could share my joys and sorrows.	☐	☐	☐	☐	☐
My family really tried to help me.	☐	☐	☐	☐	☐
I got the emotional help and support I needed from my family.	☐	☐	☐	☐	☐
I had an important person who was a real source of comfort to me.	☐	☐	☐	☐	☐
My friends really tried to help me.	☐	☐	☐	☐	☐
I could count on my friends when things went wrong.	☐	☐	☐	☐	☐
I could talk about my problems with my family.	☐	☐	☐	☐	☐
I had friends with whom I could share my joys and sorrows.	☐	☐	☐	☐	☐
There was an important person in my life who cared about my feelings.	☐	☐	☐	☐	☐

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
My family was willing to help me make decisions.	☐	☐	☐	☐	☐
I could talk about my problems with my friends.	☐	☐	☐	☐	☐

2-Way Social Support Scale

This form asks about your experience of giving, or receiving social support. Please read each statement and then indicate the degree to which the statement is generally true for you.

	Not at all (1)	(2)	(3)	(4)	Always (5)
If stranded somewhere there is someone who would get me.	☐	☐	☐	☐	☐
I help others when they are too busy to get everything done.	☐	☐	☐	☐	☐
People confide in me when they have problems.	☐	☐	☐	☐	☐
I am a person others turn to for help with tasks.	☐	☐	☐	☐	☐
I give others a sense of comfort in times of need.	☐	☐	☐	☐	☐
There is someone in my life I can get emotional support from.	☐	☐	☐	☐	☐
People close to me tell me their fears and worries.	☐	☐	☐	☐	☐
I have helped someone with their responsibilities when they were unable to fulfill them.	☐	☐	☐	☐	☐

	Not at all (1)	(2)	(3)	(4)	Always (5)
When I am feeling down there is someone I can lean on.	☐	☐	☐	☐	☐
There is at least one person that I can share most things with.	☐	☐	☐	☐	☐
I have someone to help me if I am physically unwell.	☐	☐	☐	☐	☐
There is someone who can help me fulfill my responsibilities when I am unable.	☐	☐	☐	☐	☐

Appendix E: Interview Debrief

University of Waterloo

Date: 15/01/2023

Dear participant,

I would like to thank you for your participation in this study, entitled “*Differential occupational stress in Community resource officers - Health impacts on staff in alternative police models*”. As a reminder, the purpose of this study is to describe the unique work environment of the ‘Community Engagement Unit’ (CEU) within the Waterloo Regional Police Service and assess its effects on occupational stress.

The data collected during these interviews will contribute to a better understanding of the impacts of alternative policy models such as the CEU and the impacts such models can have on the workforce itself.

Findings from this research could aid in refining the CEU’s operations as well as improving the experiences of WRPS officers. This research will also contribute to the academic understanding of alternative or supplementary policing methods from an internal organizational perspective. Finally, the conclusions of this study may provide guidance or reference for similar alternative policing models that are in operation or being developed.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Board (REB 45012). If you have questions for the Board, contact the Office of Research Ethics, toll-free at 1-833-643-2379 (Canada and USA), 1-519-888-4440, or **reb@uwaterloo.ca**.

Participants may have felt uncomfortable or anxious when discussing past experiences with or related to the CEU. These feelings are normal and should be temporary. If, upon completion of this study, you experience persistent uncomfortable or negative thoughts or emotions related to any aspect of the study, you are encouraged to immediately contact the Distress Centre of Waterloo Region: 1-866-366-4566 (toll-free); 1-519-744-1813 (crisis).

For all other questions contact Arden Fenton (agfenton@uwaterloo.ca).

Please remember that any data pertaining to you as an individual participant will be kept confidential. By providing your consent, you are not waiving your legal rights or releasing the investigator(s) or involved institution(s) from their legal and professional responsibilities. Demographics will be collected to contextualize interview questions. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles. If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, anticipated by April 30th, 2024, I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email or telephone as noted below.

We thank you again for your participation!

Arden Fenton

University of Waterloo
School of Public Health and Health Systems

Contact Telephone Number
(226) 201-2462

Agfenton@uwaterloo.ca

If you wish to participate in an additional survey, there has been a recruitment email sent to you. An ID number will be sent to you to link this survey to your interview. As with all study procedures, this is optional. This ID will be provided to you at the end of the interview both verbally and via the chat feature of the interview platform.

This ID will be used to contextualize survey results for the researchers. Any additional information provided during the survey information will not be used when assessing interview information. This ID will not be used to generate results or be reported in any documentation.

Appendix F: Narrative Review

Research orientation: The goal of this narrative review was to determine most used stress scales within the scope of occupational stress research in policing.

Database: Scopus

Journals: Occupational Medicine, Policing journals, First responders journals, & Stress related journals. This was a purposeful selection to reduce the rate of articles from social or philosophical disciplines that do not discuss police health but rather officer interactions with the public. Journals selected included:

- Occupational Medicine
- International Journal of Environmental Research and Public Health
- Journal of Occupational and Environmental Medicine
- International Journal of Emergency Mental Health
- Policing
- Giornale Italiano Di Medicina Del Lavoro Ed Ergonomia
- Journal of Police and Criminal Psychology
- Stress and Health
- International Archives of Occupational and Environmental Health
- Journal of Traumatic Stress

Document Type: articles, & reviews

Key terms: : "police", "occupational" & "stress"

Search key: (TITLE-ABS-KEY (police) AND TITLE-ABS-KEY (occupational AND stress)) AND (LIMIT-TO (EXACTSRCTITLE , "Occupational Medicine") OR LIMIT-TO (EXACTSRCTITLE , "International Journal Of Environmental Research And Public Health") OR LIMIT-TO (EXACTSRCTITLE , "Journal Of Occupational And Environmental Medicine") OR LIMIT-TO (EXACTSRCTITLE , "International Journal Of Emergency Mental Health") OR LIMIT-TO (EXACTSRCTITLE , "Policing") OR LIMIT-TO (EXACTSRCTITLE , "Giornale Italiano Di Medicina Del Lavoro Ed Ergonomia") OR LIMIT-TO (EXACTSRCTITLE , "Journal Of Police

And Criminal Psychology") OR LIMIT-TO (EXACTSRCTITLE , "Stress And Health") OR
LIMIT-TO (EXACTSRCTITLE , "International Archives Of Occupational And Environmental
Health") OR LIMIT-TO (EXACTSRCTITLE , "Journal Of Traumatic Stress")) AND (LIMIT-TO
(PUBSTAGE , "final")) AND (LIMIT-TO (PUBYEAR , 1990-2023) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "re") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (SRCTYPE , "j"))

Scales	Number of article occurrences
Perceived Stress Scale (PSS)	12
Police stress questionnaire - Operational (PSQ-OP)	12
Maslach Burnout Inventory (MBI)	9
Police stress questionnaire - organizational(PSQ-ORG)	9
Impact of event (IES)	6
Effort-Reward Imbalance Questionnaire	6
Occupational Stress Inventory (OSI)	5
Distress Thermometer	4
Sterlinberg police stress scale	4
Job Stress questionnaire (JSQ)	3
Impact of Event Scale-Revised (IES-R)	2
Critical Incidents History Questionnaire	2
demand-control-support questionnaire	2
Karasek's Job Content Questionnaire (JCQ).	2
Psychological Injury Risk Indicator (PIRI)	2
Chinese Job Content Questionnaire	1
Chinese ERI questionnaire	1
First Responder Survey on Stress, Trauma, and Restoration questionnaire	1
Physical Symptoms Inventory (PSI-12)	1
Spanish Burnout Inventory (SBI)	1
'Rapid Stress-Assessment Scale' (RSA)	1
Job Descriptive Index (JDI)	1
unnamed	1
Cognitive Reserve Index(CRI)	1
decisional conflict scale (DCS)	1
IBS	1
Norwegian police stress survey (NPSS),	1

the job stress survey	1
ORQ	1
Police incidence Survey (PIS)	1
Police Life Events Schedule (PLES)	1
Organizational Check-up Survey	1
Interpersonal Support Evaluation List-12	1
Social Relations Scale	1
Male Role Norms Scale	1
STAI Y1 and Y2 scales	1
Police Stress Questionnaire (PSQ – short)	1
Professional Quality of Life (ProQOL)	1
Pittsburgh Sleep Quality Index (PSQI)	1
Selye Stress Scale	1
Thought Control Questionnaire	1
Traumatic Exposure Severity Scale (TESS)	1
Traumatic Stress Schedule (TSS)	1
Vietnam era stress inventory	1
Work Environmental inventory	1
Workplace Assessment Scale (WAS)	1
Total	113

Appendix G: Survey Results Tables

Demographic Variables	All units	CEU	TRAD
Gender			
Man	31	2	29
Woman	17	5	12
Prefer to self-identify	1	0	1
Prefer not to answer	1	0	1
Sex			
Male	31	2	29
Female	17	5	12
Prefer to self-identify	0	0	0
Prefer not to answer	2	0	2
Level of Education			
Highschool	2	0	2
College diploma/degree	14	3	11
University degree	29	3	26
Post-graduate degree	5	1	4
Ethnic Background			
Black	2	0	2
White	44	7	37
East Asian	0	0	0
Latino/Latina	0	0	0
Middle Eastern	0	0	0
South Asian	0	0	0
Southeast Asian	1	0	1
Other	3	0	3
Relationship Status			
Common-Law	5	0	5
Married	4	2	2
Divorced/Separated	6	0	6
In a Relationship	34	4	30
Widowed	1	1	0
Single	0	0	0

Table 1: General Demographics Frequencies

This table summarizes the distribution of participants by gender, sex, education level, ethnic background, and relationship status across the Community Engagement unit (CEU) and Traditional units (TRAD), and the combined total (All units). Total responses per element may vary.

Demographic Variables	All units	CEU	TRAD
Rank			
Constable	34	4	30
Sergeant	11	3	8
Inspector	0	0	0
Other	5	0	5
Years in Service			
0-2	1	0	1
3-5	7	1	6
6-10	12	4	8
11-15	7	2	5
16-20	9	0	9
20+	14	0	14

Table 2: Occupational Demographics Frequencies

This table summarizes the distribution of participants by rank and years of service in the police across the Community Engagement unit (CEU), Traditional units (TRAD), and the combined total (All units). Total responses per element may vary.

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Level of education	4.0	22.0	28.0	946.0	-0.1	141.5	0.79
Rank	4.0	22.0	28.0	946.0	0.1	162.0	0.71
Years in service	4.0	22.0	28.0	946.0	-0.5	83.0	0.06

Table 3: Significance Testing for Ordinal Demographics Variables

This table summarizes the Mann Whitney U test results of participants' rank, education and years of service in the police across the Community Engagement unit (CEU), Traditional units (TRAD).

Nominal Demographics	Odds Ratio	95% Confidence Interval	p
Gender	0.2	(0.0-1.2)	0.08
Sex	0.2	(0.0-1.2)	0.08
Ethnic background	N/A	N/A	1.00
Relationship status	N/A	N/A	0.04*

Table 4: Significance Testing for Ordinal Demographics Variables

This table summarizes the Fisher's test results comparing Community Engagement unit (CEU), and Traditional unit (TRAD) participants' gender, sex, ethnic background, and relationship status. No Odds Ratios (OR) or Confidence Interval (CI) are reported for Ethnic background, and relationship status due to each one of these variables having more than 2 choices available to participants.

	CEU OFFICERS					TRAD OFFICERS				
	Strongly disagree	Disagree a little	Neither agree nor disagree	Agree a little	Strongly agree	Strongly disagree	Disagree a little	Neither agree nor disagree	Agree a little	Strongly agree
Reserved	0	0	1	4	2	5	8	8	14	6
Generally trusting	0	2	0	3	1	5	9	5	14	8
Tends to be lazy	5	2	0	0	0	22	13	4	2	0
Relaxed , handles stress well	0	0	1	3	3	1	8	3	16	13
Few artistic interests	0	1	0	4	2	4	6	9	12	10
Outgoing, sociable	0	1	0	5	1	0	4	9	19	9
Tends to find fault in others	0	3	1	3	0	3	12	13	12	17
Does a thorough job	0	0	0	2	5	0	1	1	22	17
Gets nervous easily	3	1	0	2	1	10	19	8	3	1
Has an active imagination	0	0	1	4	2	0	7	13	12	9

Table 5: Big Five Inventory-10 Item Scale (BFI-10) Response Frequencies

This table summarizes the distribution of participant responses on BFI-10 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Reserved	4.0	21.0	28.0	861.0	-0.4	81.0	0.06
Generally trusting	3.5	21.0	21.0	861.0	0.1	134.0	0.73
Tends to be lazy	4.0	21.0	28.0	861.0	0.2	175.0	0.31
Relaxed , handles stress well	4.0	21.0	28.0	861.0	0.2	113.0	0.36
Few artistic interests	4.0	21.0	28.0	861.0	-0.2	1.08	0.29
outgoing, sociable	4.0	21.0	28.0	861.0	0.1	151.0	0.83
Tends to find fault in others	4.0	21.0	28.0	861.0	-.0.0	136.5	0.84
Does a thorough job	4.0	21.0	28.0	861.0	0.3	188.5	0.14
Gets nervous easily	4.0	21.0	28.0	861.0	0.1	152.0	0.81
Has an active imagination	4.0	21.0	28.0	861.0	0.4	203.0	0.07

Table 6: Significance Testing for BFI-10 Variables

This table summarizes the Mann-Whitney U test results of participant BFI-10 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD).

	All units	CEU	TRAD
Openness	2.9 (0.8)	2.7 (1.0)	2.9 (0.8)
Conscientiousness	4.1 (0.7)	4.6 (0.5)	4.1 (0.6)
Extraversion	3.0 (0.9)	2.6 (0.8)	3.1 (1.0)
Agreeableness	3.0 (0.9)	3.2 (0.4)	3.0 (1.0)
Neuroticism	2.0 (0.9)	1.9 (1.1)	2.0 (0.8)

Table 7: Big Five Inventory-10 Item Scale (BFI-10) Summary Statistics

This table summarizes the average participant responses on BFI-10 subscales across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses.

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Openness	4.0	21.0	28.0	861.0	-0.1	133.0	0.75
Conscientiousness	4.0	21.0	28.0	861.0	0.4	201.0	0.06
Extraversion	4.0	21.0	28.0	861.0	-0.3	103.5	0.21
Agreeableness	3.5	21.0	21.0	861.0	0.1	141.0	0.56
Neuroticism	4.0	21.0	28.0	861.0	-0.1	130.5	0.70

Table 8: Significance Testing for BFI-10 Subscales

This table summarizes the Mann-Whitney U test results of participant BFI-10 subscales across the Community Engagement Unit (CEU) and Traditional units (TRAD).

CEU OFFICERS								TRAD OFFICERS							
	No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)		No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Shift work	6	0	0	1	0	0	0	9	8	6	4	4	4	3	4
Working alone at night	7	0	0	0	0	0	0	17	8	4	3	3	3	2	1
Over-time demands	2	1	1	2	1	0	0	13	6	3	3	8	8	4	1
Risk of being injured on the job	2	3	1	0	1	0	0	12	12	2	3	4	4	5	0
Work-related activities on days off	1	1	2	3	0	0	0	10	8	5	7	5	5	2	1
Traumatic events	4	1	0	2	0	0	0	9	7	2	6	6	6	4	4
Managing your social life outside of work	2	2	0	2	1	0	0	9	8	6	3	5	5	3	4
Not enough time available to spend with friends and family	2	1	1	2	0	0	1	4	8	10	2	4	4	6	4
Paperwork	1	3	2	1	0	0	0	9	9	5	4	2	2	3	5
Eating healthy at work	2	3	1	1	0	0	0	12	5	4	5	7	7	3	1
Finding time to stay in good physical condition	0	3	2	1	0	0	1	5	11	5	4	7	7	4	2
Fatigue	3	2	0	1	1	0	0	5	9	3	2	7	7	6	6
Occupation-related health issues	1	0	1	1	2	1	1	8	7	4	4	4	4	4	7

Table 9: Operational Police Stress Questionnaire (PSQ-Op) Response Frequencies

This table summarizes the distribution of participant responses on PSQ-Op measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	CEU OFFICERS								TRAD OFFICERS							
	No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)		No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)	
Lack of understanding from family and friends about your work	2	2	0	1	2	0	0		14	10	2	2	3	4	2	
Making friends outside the job	4	2	0	0	1	0	0		17	7	5	5	0	1	3	
Upholding a "higher image" in public	3	1	0	1	1	1	0		13	4	4	7	6	1	3	
Negative comments from the public	0	2	2	1	1	1	0		5	8	3	6	5	6	5	
Limitations to your social life	2	2	2	0	1	0	0		14	8	2	5	3	2	3	
Feeling like you are always on the job	0	0	3	2	1	1	0		14	2	6	6	5	0	5	
Friends/family feel the effects of the stigma associated with your job	1	2	1	2	0	0	1		11	10	4	3	5	2	3	

Table 9: Operational Police Stress Questionnaire (PSQ-Op) Response Frequencies (cont.)

This table summarizes the distribution of participant responses on PSQ-Op measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

Stressor	All units	CEU	TRAD
Shift work	3.0 (2.0)	1.4 (1.1)	3.3 (2.0)
Working alone at night	2.2 (1.9)	1.0 (0.0)	2.4 (1.7)
Over-time demands	3.0 (1.7)	2.9 (1.6)	3.1 (2.0)
Risk of being injured on the job	2.7 (1.7)	2.3 (1.4)	2.7 (1.8)
Work-related activities on days off	3.0 (1.6)	3.0 (1.2)	3.0 (1.7)
Traumatic events	3.3 (2.1)	2.0 (0.9)	3.6 (2.1)
Managing your social life outside of work	3.2 (2.0)	2.7 (1.6)	3.3 (2.0)
Not enough time available to spend with friends and family	3.6 (2.0)	3.1 (2.1)	3.7 (1.9)
Paperwork	3.1 (2.0)	2.4 (1.0)	3.3 (2.1)
Eating healthy at work	2.9 (1.8)	2.1 (1.1)	3.1 (2.0)
Finding time to stay in good physical condition	3.4 (1.8)	3.3 (1.8)	3.4 (1.8)
Fatigue	3.8 (2.1)	2.3 (1.6)	4.0 (2.1)
Occupation-related health issues	3.9 (2.2)	4.4 (1.9)	3.8 (2.2)
Lack of understanding from family and friends about your work	2.8 (2.0)	2.9 (1.8)	2.7 (2.0)
Making friends outside the job	2.4 (1.8)	1.9 (1.5)	2.4 (1.8)
Upholding a "higher image" in public	3.1 (2.0)	2.9 (2.1)	3.1 (2.0)
Negative comments from the public	3.9 (2.0)	3.6 (1.5)	3.9 (2.0)
Limitations to your social life	2.8 (1.9)	2.4 (1.4)	2.8 (2.0)
Feeling like you are always on the job	3.3 (2.0)	4.0 (1.2)	3.2 (2.1)
Friends/family feel the effects of the stigma associated with your job	3.0 (1.9)	3.3 (2.0)	3.0 (2.0)

Table 10: Operational Police Stress Questionnaire (PSQ-Op) Summary Statistics

This table summarizes the distribution of participant responses on PSQ-Op measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses.

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Shift work	4.0	19.5	28.0	741.0	-0.6	52.0	0.01*
Working alone at night	4.0	19.5	28.0	741.0	-0.6	59.5	0.01
Over-time demands	4.0	19.5	28.0	741.0	-0.1	125.5	0.82
Risk of being injured on the job	4.0	19.5	28.0	741.0	-0.1	122.0	0.73
Work-related activities on days off	4.0	19.5	28.0	741.0	0.0	139.5	0.85
Traumatic events	4.0	19.5	28.0	741.0	-0.5	72.5	0.06
Managing your social life outside of work	4.0	19.5	28.0	741.0	-0.2	122.5	0.52
Not enough time available to spend with friends and family	4.0	19.5	28.0	741.0	-0.2	111.0	0.49
Paperwork	4.0	19.0	28.0	703.0	-0.1	111.0	0.56
Eating healthy at work	4.0	19.0	28.0	703.0	-0.2	98.0	0.31
Finding time to stay in good physical condition	4.0	19.5	28.0	741.0	0.0	128.5	0.90
Fatigue	4.0	19.5	28.0	741.0	-0.45	67.0	0.04*
Occupation-related health issues	4.0	19.5	28.0	741.0	0.2	155.5	0.49
Lack of understanding from family and friends about your work	4.0	19.0	28.0	703.0	0.1	138.0	0.79
Making friends outside the job	4.0	19.5	28.0	741.0	-0.2	109.0	0.44
Upholding a "higher image" in public	4.0	19.5	28.0	741.0	-0.1	124.5	0.80
Negative comments from the public	4.0	19.5	28.0	741.0	-0.1	120.5	0.70
Limitations to your social life	4.0	19.0	28.0	703.0	-0.0	126.5	0.93
Feeling like you are always on the job	4.0	19.5	28.0	741.0	0.3	170.5	0.24
Friends/family feel the effects of the stigma associated with your job	4.0	19.5	28.0	741.0	0.1	150.0	0.60

Table 11: Significance Testing for Operational Police Stress (PSQ-Op) Questionnaire Variables

This table summarizes the Mann-Whitney U test results of participant PSQ-Op measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	CEU OFFICERS							TRAD OFFICERS						
	No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)	No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Dealing with co-workers	0	1	0	3	2	0	1	4	7	6	8	6	7	0
Feeling that different rules apply to different people (e.g. favouritism)	1	0	1	2	1	1	1	3	7	3	5	5	12	3
Feeling like you always have to prove yourself to the organization	0	1	0	1	2	2	1	4	2	6	8	5	10	3
Excessive administrative duties	0	0	1	3	0	2	1	4	6	7	3	5	4	9
Constant changes in policy/legislation	1	1	0	4	1	0	0	5	6	2	9	3	8	5
Staff shortages	0	3	0	3	0	1	0	5	3	1	8	4	6	10
Bureaucratic red tape	0	2	0	1	1	2	1	4	3	4	7	6	5	8
Too much computer work	0	2	3	0	2	0	0	5	9	4	8	5	2	5
Lack of training on new equipment	4	1	1	0	1	0	0	11	8	4	9	4	2	0
Perceived pressure to volunteer free time	2	1	3	0	1	0	0	15	6	4	4	5	2	2
Dealing with supervisors	0	2	1	1	1	0	2	7	7	7	5	5	3	4
Inconsistent leadership style	0	1	2	1	0	1	2	6	3	2	7	9	7	4

Table 12: Organizational Police Stress Questionnaire (PSQ-Org) Response Frequencies

This table summarizes the distribution of participant responses on PSQ-Org measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	CEU OFFICERS							TRAD OFFICERS						
	No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)	No Stress at all (1)	(2)	(3)	Moderate stress (4)	(5)	(6)	A lot of stress (7)
Lack of resources	0	2	1	2	1	1	0	7	4	3	5	7	9	5
Unequal sharing of work responsibilities	1	0	2	1	0	2	1	8	4	3	7	3	7	5
If you are sick or injured your co-workers seem to look down on you	5	0	1	1	0	0	0	14	11	2	4	0	2	4
Leaders over-emphasize the negatives (e.g. supervisor evaluations, public complaints)	2	3	0	1	0	0	1	12	5	4	5	4	4	3
Internal investigations	6	1	0	4	1	0	0	13	7	4	5	2	4	3
Dealing the court system	1	4	0	2	0	0	0	7	7	3	6	4	7	4
The need to be accountable for doing your job	1	1	0	4	1	0	0	8	11	3	6	1	6	3
Inadequate equipment	3	2	0	2	0	0	0	16	9	5	4	1	3	0

Table 12: Organizational Police Stress Questionnaire (PSQ-Org) Response Frequencies (cont.)

This table summarizes the distribution of participant responses on PSQ-Org measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
Dealing with co-workers	3.8 (1.6)	4.4 (1.5)	3.7 (1.6)
Feeling that different rules apply to different people (e.g. favouritism)	4.3 (1.9)	4.3 (2.0)	4.3 (1.9)
Feeling like you always have to prove yourself to the organization	4.4 (1.8)	5.0 (1.6)	4.3 (1.8)
Excessive administrative duties	4.3 (2.1)	4.9 (1.5)	4.2 (2.1)
Constant changes in policy/legislation	4.0 (1.9)	3.4 (1.4)	4.1 (2.0)
Staff shortages	4.5 (2.1)	3.4 (1.5)	4.6 (2.1)
Bureaucratic red tape	4.5 (2.0)	4.6 (2.0)	4.5 (2.0)
Too much computer work	3.6 (1.8)	3.3 (1.3)	3.7 (1.9)
Lack of training on new equipment	2.7 (1.6)	2.0 (1.5)	2.8 (1.6)
Perceived pressure to volunteer free time	2.8 (1.9)	2.6 (1.4)	2.8 (1.9)
Dealing with supervisors	3.6 (2.0)	4.3 (2.1)	3.5 (2.0)
Inconsistent leadership style	4.3 (1.9)	4.5 (2.1)	4.2 (1.9)
Lack of resources	4.0 (1.9)	3.7 (1.5)	4.1 (2.0)
Unequal sharing of work responsibilities	4.0 (2.1)	4.3 (2.1)	3.9 (2.0)
If you are sick or injured your co-workers seem to look down on you	2.5 (1.9)	1.7 (1.3)	2.6 (2.0)
Leaders over-emphasize the negatives (e.g. supervisor evaluations, public complaints)	3.1 (2.1)	2.7 (2.1)	3.2 (2.1)
Internal investigations	2.7 (2.0)	1.1 (0.4)	3.0 (2.1)
Dealing the court system	3.6 (2.0)	2.4 (1.1)	3.8 (2.1)
The need to be accountable for doing your job	3.3 (1.9)	3.4 (1.4)	3.3 (2.0)
Inadequate equipment	2.3 (1.5)	2.1 (1.5)	2.3 (1.6)

Table 13: Organizational Police Stress Questionnaire (PSQ-Org) Summary Statistics

This table summarizes the distribution of participant responses on PSQ-Org measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses.

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Dealing with co-workers	4.0	19.5	28.0	741.0	0.2	164.5	0.32
Feeling that different rules apply to different people (e.g. favouritism)	4.0	19.5	28.0	741.0	0.0	130.0	0.94
Feeling like you always have to prove yourself to the organization	4.0	19.5	28.0	741.0	0.2	162.5	0.36
Excessive administrative duties	4.0	19.5	28.0	741.0	0.2	156.5	0.47
Constant changes in policy/legislation	4.0	19.5	28.0	741.0	-0.2	104.0	0.36
Staff shortages	4.0	19.0	28.0	703.0	-0.4	82.5	0.13
Bureaucratic red tape	4.0	19.0	28.0	703.0	0.0	132.5	0.94
Too much computer work	4.0	19.5	28.0	741.0	-0.1	124.0	0.79
Lack of training on new equipment	4.0	19.5	28.0	741.0	-0.3	92.0	0.19
Perceived pressure to volunteer free time	4.0	19.5	28.0	741.0	0.0	133.5	1.00
Dealing with supervisors	4.0	19.5	28.0	741.0	0.2	162.5	0.36
Inconsistent leadership style	4.0	19.5	28.0	741.0	0.1	144.5	0.73
Lack of resources	4.0	19.5	28.0	741.0	-0.1	116.5	0.61
Unequal sharing of work responsibilities	4.0	19.5	28.0	741.0	0.1	141.0	0.72
If you are sick or injured your co-workers seem to look down on you	4.0	19.0	28.0	703.0	-0.3	90.0	0.19
Leaders over-emphasize the negatives (e.g. supervisor evaluations, public complaints)	4.0	19.0	28.0	703.0	-0.1	114.5	0.63
Internal investigations	4.0	19.5	28.0	741.0	-0.6	55.5	0.01*
Dealing the court system	4.0	19.5	28.0	741.0	-0.4	85.5	0.14
The need to be accountable for doing your job	4.0	19.5	28.0	741.0	0.1	146.0	0.69
Inadequate equipment	4.0	19.5	28.0	741.0	0.0	129.0	0.91

Table 14: Significance Testing for Organizational Police Stress Questionnaire (PSQ-Org)

This table summarizes the Mann-Whitney U test results of participant PSQ-Org measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	CEU OFFICERS					TRAD OFFICERS				
	Strongly disagree (1)	(2)	Neither agree or disagree (3)	(4)	Strongly agree (5)	Strongly disagree (1)	(2)	Neither agree or disagree (3)	(4)	Strongly agree (5)
I feel excited.	0	3	0	1	3	3	15	4	5	11
I feel determined.	0	5	0	0	2	2	25	2	4	5
I feel alert.	0	2	0	2	3	3	20	2	0	12
I feel nervous.	1	1	1	1	3	4	6	3	16	9
I feel tense.	0	4	1	1	1	2	17	3	9	7
I feel irritated.	0	4	1	1	1	2	17	3	9	7
I sense I am energetic.	0	5	1	0	1	2	15	11	3	7
I sense I am physically in shape.	0	3	2	1	1	2	15	4	11	6
I sense I am full of life.	0	3	2	0	2	2	16	0	6	14
I sense I am fatigued.	0	4	2	0	1	0	18	9	7	4
I sense I am exhausted.	1	0	3	2	1	3	13	10	6	6
I sense I am drained.	0	2	3	0	2	4	12	9	4	9
I am ready to act!	0	2	2	0	3	1	20	3	4	10
I am willing to expand efforts on my study/work.	0	2	3	0	2	5	12	2	7	12

Table 15: Marker of Eustress and Distress Scale (MEDS) Response Frequencies

This table summarizes the distribution of participant responses on MEDS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	CEU OFFICERS					TRAD OFFICERS				
	Strongly disagree (1)	(2)	Neither agree or disagree (3)	(4)	Strongly agree (5)	Strongly disagree (1)	(2)	Neither agree or disagree (3)	(4)	Strongly agree (5)
I am not able to concentrate on my study/work.	2	2	0	2	1	7	10	2	12	7
I cannot handle my study/work problems.	3	0	4	0	0	12	3	18	5	5
I make lots of errors in my daily study/work.	2	0	5	0	0	18	2	13	5	5

Table 15: Marker of Eustress and Distress Scale (MEDS) Response Frequencies (cont.)

This table summarizes the distribution of participant responses on MEDS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All Units	CEU	TRAD
I feel excited.	3.2 (1.4)	3.6 (1.5)	3.2 (1.4)
I feel determined.	2.6 (1.2)	2.9 (1.5)	2.6 (1.2)
I feel alert.	3.1 (1.5)	3.9 (1.3)	2.9 (1.5)
I feel nervous.	3.5 (1.3)	3.6 (1.6)	3.5 (1.3)
I feel tense.	3.0 (1.3)	2.9 (1.2)	3.1 (1.3)
I feel irritated.	2.9 (1.2)	2.6 (1.1)	2.9 (1.2)
I sense I am energetic.	3.4 (1.5)	3.6 (1.5)	3.4 (1.5)
I sense I am physically in shape.	3.1 (1.2)	3.0 (1.2)	3.1 (1.2)
I sense I am full of life.	3.4 (1.5)	3.4 (1.4)	3.4 (1.5)
I sense I am fatigued.	2.9 (1.0)	2.7 (1.1)	2.9 (1.0)
I sense I am exhausted.	3.0 (1.2)	3.3 (1.3)	3.0 (1.2)
I sense I am drained.	3.1 (1.3)	3.3 (1.3)	3.1 (1.4)
I am ready to act!	3.1 (1.4)	3.6 (2.4)	3.1 (1.4)
I am willing to expand efforts on my study/work.	3.2 (1.5)	3.3 (1.3)	3.2 (1.5)
I am willing to expand efforts on my study/work.	2.7 (1.2)	2.4 (0.5)	2.7 (1.3)
I am not able to concentrate on my study/work.	3.0 (1.5)	2.7 (1.6)	3.1 (1.5)
I cannot handle my study/work problems.	3.0 (1.5)	2.7 (1.6)	3.1 (1.6)
I make lots of errors in my daily study/work.	2.7 (1.6)	3.1 (1.8)	2.6 (1.7)

Table 16: Marker of Eustress and Distress Scale (MEDS) Summary statistics

This table summarizes the distribution of participant responses on MEDS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD).

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
I feel excited.	4.0	19.5	28.0	741.0	0.2	153.5	0.51
I feel determined.	4.0	19.5	28.0	741.0	0.1	143.5	0.71
I feel alert.	4.0	19.5	28.0	741.0	0.3	174.0	0.17
I feel nervous.	4.0	19.5	28.0	741.0	0.1	142.0	0.78
I feel tense.	4.0	19.5	28.0	741.0	-0.1	123.5	0.76
I feel irritated.	4.0	19.5	28.0	741.0	-0.2	104.5	0.35
I sense I am energetic.	4.0	19.5	28.0	741.0	0.1	141.0	0.80
I sense I am physically in shape.	4.0	19.5	28.0	741.0	0.0	128.1	0.88
I sense I am full of life.	4.0	19.5	28.0	741.0	0.0	134.0	0.99
I sense I am fatigued.	4.0	19.5	28.0	741.0	-0.1	117.0	0.60
I sense I am exhausted.	4.0	19.5	28.0	741.0	0.2	157.5	0.44
I sense I am drained.	4.0	19.5	28.0	741.0	0.1	148.5	0.63
I am ready to act!	4.0	19.5	28.0	741.0	0.2	166.0	0.27
I am willing to expand efforts on my study/work.	4.0	19.5	28.0	741.0	0.1	140.0	0.83
I am willing to expand efforts on my study/work.	4.0	19.5	28.0	741.0	0.0	137.0	0.90
I am not able to concentrate on my study/work.	4.0	19.5	28.0	741.0	-0.1	115.5	0.58
I cannot handle my study/work problems.	4.0	19.5	28.0	741.0	-0.1	114.0	0.53
I make lots of errors in my daily study/work.	4.0	19.5	28.0	741.0	0.1	150.5	0.56

Table 17: Significance Testing for Marker of Eustress and Distress Scale (MEDS)

This table summarizes the Mann-Whitney U test results of participant MEDS measures in the police comparing Community Engagement Unit (CEU), and Traditional units (TRAD). * Notes a p-value < .05.

	All units	CEU	TRAD
Eustress	2.7 (0.8)	2.7 (0.8)	2.7 (0.8)
Distress	2.6 (0.7)	2.6 (0.5)	2.6 (0.7)

Table 18: Marker of Eustress and Distress Scale (MEDS) Subscale Measures

This table summarizes the distribution of participant responses on MEDS subscales across the Community Engagement Unit (CEU) and Traditional units (TRAD).

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Eustress	4.0	19.5	28.0	741.0	0.0	134.0	0.99
Distress	4.0	19.5	28.0	741.0	0.0	129.0	0.90

Table 19: Significance Testing for Marker of Eustress and Distress Scale (MEDS)

This table summarizes the Mann-Whitney U test results of participant MEDS subscales in the police comparing Community Engagement Unit (CEU), and Traditional units (TRAD). * Notes a p-value < .05.

	CEU OFFICERS					TRAD OFFICERS				
	Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree	Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree
There was an important person who was around when I was in need.	0	0	0	3	4	0	2	1	13	21
There was an important person with whom I could share my joys and sorrows.	0	0	0	3	4	0	2	0	14	21
My family really tried to help me.	0	0	1	1	5	0	1	7	11	18
I got the emotional help and support I needed from my family.	0	0	2	1	4	0	1	7	12	16

Table 20: Multidimensional Scale for Perceived Social Support (MS-PSS) Response Frequencies

This table summarizes the distribution of participant responses on MS-PSS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	CEU OFFICERS					TRAD OFFICERS				
	Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree	Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree
I had an important person who was a real source of comfort to me.	0	0	2	0	5	0	1	3	13	20
My friends really tried to help me.	0	0	3	2	2	0	7	7	12	11
I could count on my friends when things went wrong.	0	0	2	3	2	0	6	7	13	11
I could talk about my problems with my family.	0	2	0	2	3	1	3	3	15	15

Table 20: Multidimensional Scale for Perceived Social Support (MS-PSS) Response Frequencies (cont.)

This table summarizes the distribution of participant responses on MS-PSS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	CEU OFFICERS					TRAD OFFICERS				
	Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree	Strongly disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly agree
I had friends with whom I could share my joys and sorrows.	0	0	0	3	4	2	4	4	16	11
There was an important person in my life who cared about my feelings.	0	0	0	2	5	1	0	3	18	15
My family was willing to help me make decisions.	0	0	1	2	4	0	3	7	15	12
I could talk about my problems with my friends.	0	2	0	2	3	3	4	4	14	12

Table 20: Multidimensional Scale for Perceived Social Support (MS-PSS) Response Frequencies (cont.)

This table summarizes the distribution of participant responses on MS-PSS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
There was an important person who was around when I was in need.	4.5 (0.7)	4.6 (0.3)	4.4 (0.8)
There was an important person with whom I could share my joys and sorrows.	4.5 (0.7)	4.6 (0.5)	4.5 (0.8)
My family really tried to help me.	4.3 (0.9)	4.6 (0.8)	4.2 (0.9)
I got the emotional help and support I needed from my family.	4.2 (0.9)	4.3 (1.0)	4.2 (0.9)
I had an important person who was a real source of comfort to me.	4.4 (0.8)	4.4 (1.0)	4.4 (0.8)
My friends really tried to help me.	3.8 (1.1)	3.9 (0.9)	3.7 (1.1)
I could count on my friends when things went wrong.	3.8 (1.0)	4.0 (0.8)	3.8 (1.1)
I could talk about my problems with my family.	4.0 (1.1)	3.9 (1.3)	4.1 (1.0)
I had friends with whom I could share my joys and sorrows.	3.9 (1.1)	4.6 (0.5)	3.8 (1.2)
There was an important person in my life who cared about my feelings.	4.3 (0.8)	4.7 (0.5)	4.2 (0.8)
My family was willing to help me make decisions.	4.0 (0.9)	4.4 (0.8)	4.0 (0.9)
I could talk about my problems with my friends.	3.8 (1.3)	3.9 (1.3)	3.8 (1.3)

Table 21: Multidimensional Scale for Perceived Social Support (MS-PSS) Summary Statistics

This table summarizes the distribution of participant responses on MS-PSS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD).

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
There was an important person who was around when I was in need.	4.0	19.0	28.0	703.0	0.0	134.5	0.87
There was an important person with whom I could share my joys and sorrows.	4.0	19.0	28.0	703.0	0.0	133.0	0.91
My family really tried to help me.	4.0	19.0	28.0	703.0	0.2	158.0	0.32
I got the emotional help and support I needed from my family.	4.0	18.5	28.0	666.0	0.1	135.0	0.76
I had an important person who was a real source of comfort to me.	4.0	19.0	28.0	703.0	0.1	140.0	0.72
My friends really tried to help me.	4.0	19.0	28.0	703.0	0.0	134.5	0.88
I could count on my friends when things went wrong.	4.0	19.0	28.0	703.0	0.1	140.5	0.73
I could talk about my problems with my family.	4.0	19.0	28.0	703.0	-0.1	122.5	0.82
I had friends with whom I could share my joys and sorrows.	4.0	19.0	28.0	703.0	0.4	180.0	0.09
There was an important person in my life who cared about my feelings.	4.0	19.0	28.0	703.0	0.3	173.5	0.12
My family was willing to help me make decisions.	4.0	19.0	28.0	703.0	0.3	165.5	0.23
I could talk about my problems with my friends.	4.0	19.0	28.0	703.0	0.1	139.0	0.76

Table 22: Significance Testing for Multidimensional Scale for Perceived Social Support (MS-PSS)

This table summarizes the Mann-Whitney U test results of participant MS-PSS measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	CEU OFFICERS					TRAD OFFICERS				
	Not at all (1)	(2)	(3)	(4)	Always (5)	Not at all (1)	(2)	(3)	(4)	Always (5)
If stranded somewhere there is someone who would get me.	0	0	0	2	5	0	0	0	8	28
I help others when they are too busy to get everything done.	0	0	1	4	2	0	1	1	17	18
People confide in me when they have problems.	0	0	0	5	2	0	3	2	12	20
I am a person others turn to for help with tasks.	0	0	0	5	2	1	0	2	18	16
I give others a sense of comfort in times of need.	0	0	0	5	2	0	1	5	13	17
There is someone in my life I can get emotional support from.	0	0	0	2	5	0	1	7	11	18
People close to me tell me their fears and worries.	0	0	0	4	3	0	2	3	12	20
I have helped someone with their responsibilities when they were unable to fulfill them.	0	0	1	4	2	0	0	3	12	22
When I am feeling down there is someone I can lean on.	0	0	0	3	4	1	1	7	11	17
There is at least one person that I can share most things with.	0	0	0	3	4	1	0	1	11	24
I have someone to help me if I am physically unwell.	0	0	0	2	5	0	2	4	10	21
There is someone who can help me fulfill my responsibilities when I am unable.	0	0	1	3	3	0	4	5	10	18

Table 23: Two-Way Social Support Scale (2W-SSS) Response Frequencies

This table summarizes the distribution of participant responses on 2W-SSS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
If stranded somewhere there is someone who would get me.	4.8 (0.4)	4.7 (0.5)	4.7 (0.4)
I help others when they are too busy to get everything done.	4.4 (0.7)	4.1 (0.7)	4.4 (0.7)
People confide in me when they have problems.	4.3 (0.9)	4.3 (0.5)	4.3 (0.9)
I am a person others turn to for help with tasks.	4.3 (0.8)	4.3 (0.5)	4.3 (0.8)
I give others a sense of comfort in times of need.	4.3 (0.8)	4.3 (0.5)	4.3 (0.8)
There is someone in my life I can get emotional support from.	4.3 (0.8)	4.7 (0.5)	4.2 (0.9)
People close to me tell me their fears and worries.	4.4 (0.7)	4.4 (0.5)	4.4 (0.9)
I have helped someone with their responsibilities when they were unable to fulfill them.	4.5 (0.4)	4.1 (0.7)	4.5 (0.7)
When I am feeling down there is someone I can lean on.	4.2 (1.0)	4.6 (0.5)	4.1 (1.4)
There is at least one person that I can share most things with.	4.5 (0.8)	4.6 (0.5)	4.5 (0.8)
I have someone to help me if I am physically unwell.	4.4 (0.9)	4.7 (0.5)	4.4 (0.9)
There is someone who can help me fulfill my responsibilities when I am unable.	4.2 (1.0)	4.3 (0.8)	4.1 (1.0)

Table 24: Two-Way Social Support Scale (2W-SSS) Summary Statistics

This table summarizes the distribution of participant responses on 2W-SSS measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses.

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
If stranded somewhere, there is someone who would get me.	4.0	18.5	28.0	666.0	-0.1	118.0	0.74
I help others when they are too busy to get everything done.	4.0	19.0	28.0	703.0	-0.2	99.5	0.29
People confide in me when they have problems.	4.0	19.0	28.0	703.0	-0.2	109.0	0.48
0.I am a person others turn to for help with tasks.	4.0	19.0	28.0	703.0	-0.1	118.0	0.69
I give others a sense of comfort in times of need.	4.0	18.5	28.0	666.0	-0.1	117.5	0.77
There is someone in my life I can get emotional support from.	4.0	19.0	28.0	703.0	0.3	167.0	0.19
People close to me tell me their fears and worries.	4.0	19.0	28.0	703.0	-0.0	125.0	0.89
I have helped someone with their responsibilities when they were unable to fulfill them.	4.0	19.0	28.0	703.0	-0.3	89.5	0.15
When I am feeling down there is someone I can lean on.	4.0	19.0	28.0	703.0	0.2	157.5	0.34
There is at least one person that I can share most things with.	4.0	19.0	28.0	703.0	-0.1	122.5	0.81
I have someone to help me if I am physically unwell.	4.0	19.0	28.0	703.0	0.2	154.5	0.37
There is someone who can help me fulfill my responsibilities when I am unable.	4.0	19.0	28.0	703.0	0.0	132.5	0.93

Table 25: Significance Testing for Two-Way Social Support Scale (2W-SSS)

This table summarizes the Mann-Whitney U test results of participant 2W-SSS measures in the police comparing Community Engagement Unit (CEU), and Traditional units (TRAD). * Notes a p-value < .05.

	All units	CEU	TRAD	OR	95% CI
Respiratory disorder	4/46 (8.7%)	0/7 (0.0%)	4/39 (10.3%)	0.5	(0.0 – 10.8)
Gastrointestinal disorder	4/44 (9.1%)	0/6 (0.0%)	4/38 (10.5%)	0.6	(0.0 – 12.3)
Musculoskeletal disorder	21/45 (46.7%)	3/7 (42.9%)	18/38 (47.4%)	0.8	(0.2 - 4.2)
Hypertension	7/45 (15.6%)	0/6 (0.0%)	7/39 (18.4%)	0.3	(0.0 - 6.6)
High blood cholesterol, or lipids	3/46 (6.5%)	0/7 (0.0%)	3/39 (7.7%)	0.7	(0.0 – 14.9)
Diabetes	0/47 (0.0%)	0/7 (0.0%)	0/40 (0.0%)	5.4	(0.1 - 293.9)
Mood disorder	6/45 (13.3%)	0/6 (0.0%)	6/39 (15.4%)	0.4	(0.0 – 7.9)
Anxiety disorder	9/42 (21.4%)	1/6 (16.7%)	8/36 (22.2%)	0.3	(0.0 – 6.8)

Table 26: General Health Questionnaire (GHQ-12) Prevalence of Long-term Conditions

This table summarizes the Fisher's test results of participant GHQ-12 prevalence of long-term conditions in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). OR: odds of CEU having condition relative to traditional police officers.

	All units	CEU	TRAD
Sleep per night			
Fewer than 4 hours	2	0	2
4 hours to 6 hours	14	1	13
More than 8	31	6	25
Do not know	0	0	0
Prefer not to answer	0	0	0
Trouble going to sleep/staying asleep			
Never	7	0	7
Sometimes	19	4	15
Most of the time	14	1	13
All of the time	7	2	5
Do not know	0	0	0
Prefer not to answer	0	0	0
Energetic in the mornings			
Never	18	3	15
Sometimes	18	3	15
Most of the time	11	1	10
All of the time	0	0	0
Do not know	0	0	0
Prefer not to answer	0	0	0

Table 27: General Health Questionnaire (GHQ-12) Sleep Response Frequencies

This table summarizes the distribution of participant sleep-related responses on GHQ-12 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
Sleep per night	2.6 (0.6)	2.9 (0.4)	2.6 (0.6)
Trouble going to sleep/ staying asleep	2.4 (0.9)	2.7 (1.0)	2.4 (0.9)
Energetic in the mornings	1.9 (0.8)	1.7 (0.8)	1.9 (0.5)

Table 28: General Health Questionnaire (GHQ-12) Sleep Summary Statistics

This table summarizes the distribution of participant responses on GHQ-12 sleep measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
Sleep per night	4.0	20.5	28.0	820.0	0.2	173.5	0.23
Trouble going to sleep/staying asleep	4.0	20.5	28.0	820.0	0.2	161.5	0.51
Energetic in the mornings	4.0	20.5	28.0	820.0	-0.1	125.0	0.64

Table 29: Significance Testing for General Health Questionnaire (GHQ-12) Sleep Variables

This table summarizes the Mann-Whitney U test results of participant GHQ-12 sleep measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	CEU OFFICERS						TRAD OFFICERS					
	Daily	Occasionally	Not at all	Never	Do not know	Prefer not to answer	Daily	Occasionally	Not at all	Never	Do not know	Prefer not to answer
smoke tobacco cigarettes	0	0	5	2	0	0	0	0	17	23	0	0
smoke any cigars, cigarillos, a pipe, or make use of a hookah	0	0	5	2	0	0	0	6	13	21	0	0
use an “e-cigarette” (also known as vaping)	0	0	5	2	0	0	0	1	16	23	0	0
smoke cannabis (marijuana) cigarettes and/or use a cannabis vaporiser	0	0	5	2	0	0	2	3	14	21	0	0

Table 30: General Health Questionnaire (GHQ-12) Inhalant Use Response Frequencies

This table summarizes the distribution of participant inhalant-use-related responses on GHQ-12 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
smoke tobacco cigarettes	3.5 (0.5)	3.9 (1.5)	4.8 (1.5)
smoke any cigars, cigarillos, a pipe, or make use of a hookah	3.4 (0.7)	3.9 (1.5)	4.4 (2.9)
use an “e-cigarette” (also known as vaping)	3.5 (0.5)	3.9 (1.5)	4.7 (1.5)
smoke cannabis (marijuana) cigarettes and/or use a cannabis vaporizer	3.3 (0.8)	3.9 (1.5)	4.4 (1.8)

Table 31: General Health Questionnaire (GHQ-12) Inhalant Use Summary Statistics

This table summarizes the distribution of participant responses on GHQ-12 inhalant use measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
smoke tobacco cigarettes	4.0	20.5	28.0	820.0	-0.3	99.5	0.17
smoke any cigars, cigarillos, a pipe, or make use of a hookah	4.0	20.5	28.0	820.0	-0.1	121.5	0.55
use an “e-cigarette” (also known as vaping)	4.0	20.5	28.0	820.0	-0.3	102.0	0.20
smoke cannabis (marijuana) cigarettes and/or use a cannabis vaporizer	4.0	20.5	28.0	820.0	-0.2	119.0	0.50

Table 32: Significance Testing for General Health Questionnaire (GHQ-12) Inhalant Use Variables

This table summarizes the Mann-Whitney U test results of participant GHQ-12 inhalant use measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	All units	CEU	TRAD
How often did you drink alcoholic beverages?			
Daily	2	0	2
Several times per week	10	0	10
Once per week	5	0	5
A few times during the month	12	3	9
Once during the month	8	0	8
Not at all	10	4	6
Do not know	0	0	0
Prefer not to answer	0	0	0
How many drinks would you typically consume on one occasion?			
Not applicable	0	0	0
1 drink	13	3	10
2-3 drinks	20	2	18
4-5 drinks	6	1	5
More than 5 drinks	0	0	0
Do not know	1	0	1
Prefer not to answer	0	0	0

Table 33: General Health Questionnaire (GHQ-12) Alcohol Consumption Response Frequencies

This table summarizes the distribution of participant alcohol consumption responses on GHQ-12 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
How often do you drink an alcoholic beverage	3.9 (1.6)	5.1 (1.1)	3.7 (1.5)
How many drinks would you typically consume on one occasion?	2.9 (0.7)	2.7 (0.8)	2.9 (0.9)

Table 34: General Health Questionnaire (GHQ-12) Alcohol Consumption Summary Statistics

This table summarizes the distribution of participant responses on GHQ-12 alcohol consumption measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
How often did you drink alcoholic beverages?	4.0	20.5	28.0	820.0	0.5	212.5	0.03*
How many drinks would you typically consume on one occasion?	3.5	17.0	21.0	561.0	-0.2	83.5	0.05

Table 35: Significance Testing for General Health Questionnaire (GHQ-12) Alcohol Consumption Variables

This table summarizes the Mann-Whitney U test results of participant GHQ-12 alcohol consumption measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	All units	CEU	TRAD
How often did you use a pain releiver?			
Daily	1	0	1
Several times per week	0	0	0
Once per week	0	0	0
A few times during the month	3	0	3
Once during the month	6	2	4
Not at all	37	5	32
Do not know	0	0	0
How often did you use a stimulant?			
Not applicable	0	0	0
Daily	1	0	1
Several times per week	0	0	0
Once per week	0	0	0
A few times during the month	3	0	3
Once during the month	6	2	4
Not at all	37	5	32
Do not know	0	0	0
How often did you use sedatives, or anti-anxiety medications?			
Daily	3	1	2
Several times per week	0	0	0
Once per week	0	0	0
A few times during the month	0	0	0
Once during the month	0	0	0
Not at all	43	6	37
Do not know	0	0	0

Table 36: General Health Questionnaire (GHQ-12) Medication Response Frequencies

This table summarizes the distribution of participant pain medication responses on GHQ-12 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
How often did you use a pain reliever?	5.6 (0.9)	5.7 (0.5)	5.6 (1.0)
How often did you use a stimulant?	6.0 (0.0)	6.0 (0.0)	6.0 (0.0)
How often did you use a sedative, or anti-anxiety medication?	5.7 (1.2)	5.3 (1.2)	5.7 (1.3)

Table 37: General Health Questionnaire (GHQ-12) Medication Summary Statistics

This table summarizes the distribution of participant responses on GHQ-12 pain medication measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
How often did you use a pain reliever?	4.0	20.5	28.0	820.0	-0.1	132.0	0.75
How often did you use a stimulant?	4.0	20.5	28.0	820.0	0.0	140.0	1.00
How often did you use a sedative anti-anxiety medication?	4.0	20.5	28.0	820.0	-0.1	130.0	0.56

Table 38: Significance Testing for General Health Questionnaire (GHQ-12) Medication Variables

This table summarizes the Mann-Whitney U test results of participant GHQ-12 medication use measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

	CEU OFFICERS						TRAD OFFICERS					
	<1 per week	1-2 times per week	3-4 times per week	5-6 times per week	Do not know	Prefer not to answer	<1 per week	1-2 times per week	3-4 times per week	5-6 times per week	Do not know	Prefer not to answer
walking, or cycling to get to places	4	1	1	1	0	0	22	5	4	9	0	0
sports, fitness, or recreational physical activities	0	1	3	3	0	0	3	7	11	19	0	0
other physical activities	1	5	0	1	0	0	8	13	9	10	0	0

Table 39: General Health Questionnaire (GHQ-12) Health Behavior Response Frequencies

This table summarizes the distribution of participant health behaviour responses on GHQ-12 measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Total responses per element may vary.

	All units	CEU	TRAD
walking, or cycling to get to places	2.0 (1.2)	1.9 (1.2)	2.0 (1.3)
sports, fitness, or recreational physical activities	3.2 (0.9)	3.3 (0.8)	3.2 (1.0)
other physical activities	2.5 (1.1)	2.1 (0.9)	2.5 (1.1)

Table 40: General Health Questionnaire (GHQ-12) Health Behavior Summary Statistics

This table summarizes the distribution of participant responses on GHQ-12 health behavior activity measures across the Community Engagement Unit (CEU) and Traditional units (TRAD). Standard deviations are displayed in parentheses

	Rank Mean		Rank Sum		Effect size (d)	U	p
	CEU	TRAD	CEU	TRAD			
walking, or cycling to get to places	4.0	20.5	28.0	820.0	-0.1	133.0	0.83
sports, fitness, or recreational physical activities	4.0	20.5	28.0	820.0	0.0	144.5	0.90
other physical activities	4.0	20.5	28.0	820.0	-0.2	111.5	0.38

Table 41: Significance Testing for General Health Questionnaire (GHQ-12) Health Behavior Variables

This table summarizes the Mann-Whitney U test results of participant GHQ-12 health behavior measures in the police comparing Community Engagement Unit (CEU) and Traditional units (TRAD). * Notes a p-value < .05.

Glossary

First Responder (FR): Individual in an occupation involved in emergency public safety work, such as firefighters, paramedics, and police officers.

Eustress: Stress associated with positive feelings and healthy states, often described as beneficial to physical or mental health.

Distress: Stress associated with negative emotions and disturbed bodily states, often described as harmful to physical or mental health.

Eustress-Distress Paradigm: A model that describes the range of possible reactions to stress, from beneficial (eustress) to harmful (distress). Often these reactions can be experienced simultaneously.

Yerkes-Dodson Law: An optimal level of arousal (or stress) motivates task performance, while over- or under-stimulation can lead to poor productivity in a workplace setting.

Occupational Stress: Physical or emotional responses to the demands and challenges of one's job.

Mental Health Conditions: Various mental health issues, including posttraumatic stress disorder (PTSD), depression, anxiety disorders, substance use disorder, alcohol use disorder (AUD), suicidal ideation, stress, and burnout.

Operational Stress: Job task-related stress, including but not limited to shiftwork, working alone at night, overtime, injury, traumatic events, paperwork, fatigue, public perception, and work life balance.

Organizational Stress: Sociocultural context-related stress within the workplace, including but not limited to leadership style, staff shortages, bureaucracy, lack of resources, differential treatment, and lack of training.

Moral Distress: the psychological unease when an individual has an ethically correct action to take but are constrained in their ability to take that action by a broader structure such as an organization's policy.

Moral Injury: the psychological, behavioral, social response to an event that goes against an individual's values or beliefs; this often induces feelings of shame, grief, meaninglessness, and remorse for violating one's moral values.

Physiological Health: The impact of stress on the body's organ systems.

Cardiovascular Diseases (CVD): Disorders related to the heart and blood vessels.

Metabolic Syndrome: A cluster of conditions that increase the risk of heart disease, stroke, and type 2 diabetes.

Musculoskeletal Disorders (MSD): Disorders affecting the muscles, bones, tendons, ligaments, and other parts of the musculoskeletal system.

Gastrointestinal Issues: Health problems affecting the digestive system.

Policing Climate: The overall atmosphere and context of policing influenced by factors such as geography, cultural ideas, and political concerns.

Community Policing Approaches: Strategies that emphasize civilian and societal wellbeing through partnerships, community trust-building, and a problem-solving approach.

Community Engagement Unit (CEU): An alternative policing unit that connects high-needs community members with community services, diverting them from traditional law enforcement responses.

Phenotype: A set of observable characteristics resulting from the interaction of an organism's genetic makeup and its environment. In this context, it refers to the unique sets of work stressors in alternative policing units, and the characteristics of CEU officers resulting in differential stress profiles.

Wellness Check: A visit to an individual's residence or location to ensure their well-being, often conducted by law enforcement or emergency services.