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Trauma-Informed Neurofeedback for Law Enforcement Occupational and Organizational Stress

James R. Spears[1], Devon E. Romero[1], Katherine McVay[2], and Emily Surratt[1]*

[1]University of Texas at San Antonio, Department of Counseling, San Antonio, Texas, USA
[2]Texas A&M University-Corpus Christi, Corpus Christi, Texas, USA

Abstract

Occupational and organizational stressors impact workplace performance and contribute to mental health concerns among law enforcement officers. Although literature focuses on identifying the degree of relationship that these two factors have within this specific profession, studies offer limited solutions for decreasing associated symptoms relating to stressors. Implementing an intervention that acknowledges law enforcement factors such as psychological and physiological concerns, workplace culture, and mental health stereotypes could significantly impact both those that serve within this career as well as the community. In this article, we explore the use of trauma-informed neurofeedback a therapeutic intervention for the treatment of occupational and organizational stressors commonly experienced by law enforcement officers. We also present recommendations for clinical practice and research.

Keywords: law enforcement; occupational stress; organizational stress; neurofeedback

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***Address correspondence to**: James R. Spears, University of Texas at San Antonio, Department of Counseling, 501 W. Cesar E. Chavez, San Antonio, TX 78207, USA. Email: james.spears@utsa.edu

Edited by:
Rex L. Cannon, PhD, Currents, Knoxville, Tennessee, USA

Reviewed by:
Rex L. Cannon, PhD, Currents, Knoxville, Tennessee, USA
Randall Lyle, PhD, Mount Mercy University, Cedar Rapids, Iowa, USA

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Law enforcement officers undertake an occupational position that requires psychological and physiological wellness (Violanti, 2021). The profession encompasses the potential for repeated exposure to traumatic situations and affiliated mental health consequences (Tovar, 2011). In tandem with subjection to dangerous situations, law enforcement officers must uphold high standards of ethical behavior while simultaneously navigating public scrutiny (Bishopp et al., 2016). Unsurprisingly, these professionals are likely to suffer from mental health concerns due to the combination of occupational and organizational stressors associated with their profession. For instance, law enforcement officers commonly encounter a variety of stress-related situations such as motor vehicle accidents, witnessing violent deaths, and altercations with perpetrators (Arnetz et al., 2009; Marmar et al., 2006) while also handling day-to-day aspects including job structure, departmental hierarchies, and administrative pressure (Dabney et al., 2013). Further, since 2020, law enforcement officers have also experienced the aftereffects associated with civil unrest and the COVID-19 pandemic (Violanti, 2021).

In the book *The Siege: Mental Health and the Police,* Violanti (2021) stated, “there are mental health crises in police work and an urgent need to resolve these crises” (p. 3). Counselors and other mental health professionals are in a unique position to provide services to these professionals and do so in a way that is accessible for those who may be hesitant to seek assistance (Hakik & Langlois, 2020). In this article, we propose utilizing a trauma-informed approach to neurofeedback when assisting law enforcement officers with mental health concerns. Through this lens, we consider how neurofeedback attends to law enforcement occupational and organizational stressors, workplace culture, traditional reluctance to seeking

out mental health services, and recommendations for clinical practice. Furthermore, this article aims to provide meaningful content promoting career retention, mental health services, and future research that advocate for law enforcement officers.

Occupational and Organizational Stressors in Law Enforcement

Researchers have explored causations for negative psychological and physiological concerns among the law enforcement population such as occupational burnout (Burke, 2017; Martinussen et al., 2007), poor decision-making (Nieuwenhuys et al., 2012), performance (Reynolds et al., 2018; Shane, 2010), and the onset of mental illness (Carlan & Nored, 2008). In addition, several studies have explored the connection that geography (Husain, 2020), professional roles (Dabney et al., 2013), and work-family conflict (Griffin & Sun, 2018) have with unfavorable employment outcomes. Although literature concludes the need to further explore additional avenues, researchers generally propose occupational and organizational stressors as two broad themes contributing to these unwanted issues (Soomro & Yanos, 2019). Occupational stressors depict environmental elements (e.g., community interactions, public perception, exposure to dangerous situations), while organizational stressors characterize facets relating to the institutional portion of the career (e.g., departmental structure, interactions with supervisors, job promotions, disciplinary actions; Dabney et al., 2013).

Due to the nature of their work, law enforcement officers are exposed to both occupational and organizational stressors repeatedly throughout their careers. These stressors can lead to the onset of physical, behavioral, and mental health concerns. Researchers have documented negative physical symptoms in this population as increased rates of diabetes, cardiac complications, and obesity (Trombka et al., 2021), while articulating police misconduct (e.g., unnecessary force) as a behavioral repercussion to unattended occupational and organizational stressors. Relating to mental health, in their meta-analysis, Syed et al. (2020) found the most common mental health problems among law enforcement officers were depression, posttraumatic stress disorder (PTSD), generalized anxiety disorder, suicidal ideation, and alcohol use. To emphasize this finding, a study conducted by Jetelina et al. (2020) discovered that out of the 434 participating officers from Dallas-Fort Worth, Texas, 54 (12%) reported a lifetime mental health diagnosis of depression, anxiety, or PTSD. An additional 114 (26%) officers without a lifetime mental illness diagnosis had positive screening results for current mental illness symptoms representative of depression, anxiety, PTSD, and/or suicidal ideation or self-harm. Of those reporting a lifetime diagnosis or positive screening results for a current mental illness, PTSD was the most reported mental health concern, followed by depression and anxiety (Jetelina et al., 2020).

Ongoing exposure to occupational and organizational stressors provides a unique challenge when working with the law enforcement population (Lawson et al., 2022). It is worth noting that while a presenting concern for the treatment of an officer may be PTSD, depression, or anxiety stemming from repeated exposure to occupational stressors, these symptoms may be compounded or exacerbated by organizational stressors such as unsupportive supervisors, policies, and procedures (Kohan & Mazmanian, 2003; Molnar et al., 2017). In fact, in addition to the onset of adverse mental health symptoms, researchers have also identified that occupational and organizational stressors influence burnout (Burke, 2017), negative perceptions to workplace fairness (Kohan & Mazmanian, 2003; Wolfe & Nix, 2017), and police misconduct (Bishopp et al., 2016). The events following 2020 have only exacerbated this phenomenon. Based on their review of historical trends following the HIV epidemic and terrorist attacks of September 11, 2002, researchers such as Stogner et al. (2020) theorized an increased experience of work-related stressors (e.g., resource shortages, loss of personnel, economic uncertainty) as a result of COVID-19. Treatment modalities for stress and other mental health concerns for law enforcement officers must be flexible to reflect the demands and stressors each officer may face regardless of cultural or departmental dynamics (Padilla, 2020).

Of particular interest to this article, law enforcement officers are exposed to trauma routinely, both directly and indirectly as vicarious trauma, making PTSD and stress-related symptoms one of the more concerning mental health issues in this field (Hakik & Langlois, 2020). PTSD and trauma-related symptoms are the outward expression of an internal rewiring of neural networks and damages to behavioral and emotional areas of the brain (Bremner, 2006). Areas such as the prefrontal cortex (behavior), hippocampus (memory), and the amygdala (emotion) undergo changes when a person is exposed to trauma and the underlying changes are responsible for the cognitive-affective

dysfunctional symptoms observed in PTSD clients (Harnett et al., 2020). These brain alterations create ongoing symptoms that might negatively express themselves in an officer's job performance, leading to a lack of ability to cope with ongoing work-related stressors.

A Barrier to Care: Mental Health Stigma in Law Enforcement

Law enforcement officer training is a rigorous and daunting process. It entails breaking down an individual's identity to rebuild professional characteristics such as independence and self-reliance (Wester et al., 2010). A trainee learns that the loss of emotional control could risk their career (Karaffa & Koch, 2016), implicitly encouraging the suppression of their mental health concerns. Although officer training constructs internal protective barriers that safeguard against high-risk and dangerous occupational events, the preparation traditionally supports workplace stigmas surrounding mental health (Karaffa & Koch, 2016). Additionally, because this career also emphasizes colleague protection and rapport (Loftus, 2010; Wester et al., 2010), law enforcement professionals have been found to view seeking outside help with distrust as it promotes the concept of an officer's inability to protect another professional in an escalating situation (Soomro & Yanos, 2019). This increases the possibility of having an officer who struggles with either a mental health illness or stress related to the job to deny their condition, oppose assistance, silently struggle until retirement (Hakik & Langlois, 2020), or retire early (Police Executive Research Forum, 2021).

Efforts for Treatment

Given the negative mental health implications that occupational and organizational stressors have on officers, their families, those they serve, and their organizations (Burke, 2017; Griffin & Sun, 2018; Hakik & Langlois, 2020), therapeutic interventions that address these concerns are needed. In fact, the United States Congress unanimously signed the Law Enforcement Mental Health and Wellness Act (LEMHWA; 2018) into law in 2018, acknowledging the need for mental health resources and interventions for law enforcement officers. A review of literature indicates that researchers continue to examine stress management and resilience strategies as main avenues for reducing law enforcement mental health concerns while improving work performance (Christopher et al., 2016; Grupe et al., 2021).

Rooted in psychological frameworks (i.e., cognitive-behavioral, mindfulness-based resilience, motivational interviewing), these approaches employ techniques that ask individuals to gain deeper intrapersonal awareness through identifying and recognizing signs of stress (Grupe et al., 2021), participating in guided meditation and imagery exercises (Christopher et al., 2016), integrating coping strategies (Eddy et al., 2021), and engaging in group mental health support programs (Hohner, 2017). These research initiatives reveal promising results. For instance, Christopher et al. (2016) constructed a mindfulness-based resilience training program for 43 United States officers that contained various common mindfulness practices, such as body scanning, mindful movement, and walking meditations. The focus of the study was to equip participants with strategies to manage occupational and organizational stressors. During an 8-week period, officers attended weekly sessions that intentionally adapted common language and understandings found within this population. Results were significant in attending to a variety of symptoms including burnout, emotional regulation, mental health, personal awareness, and perceived stress (Christopher et al., 2016). Similarly, Grupe et al. (2021) developed a comparable program but included a 5-month follow-up for the 30 participants. Measured relative to the pretest data, results continued to reveal improvements in PTSD, burnout, anxiety, and sleep quality (Grupe et al., 2021).

Unfortunately, despite the positive outcomes of utilizing stress management and mindfulness-based interventions with law enforcement personnel, one substantial limitation remains. Noted in their qualitative study, Eddy et al. (2021) found that although participants relayed improvement in interpersonal and intrapersonal functioning following mindfulness-based resilience training, participants also disclosed that ingrained professional stigmas might deter professionals from participating. This limitation is congruent with past law enforcement literature suggesting officers might view stress management and resilience strategies as abstruse or mundane (Anderson et al., 1995) as well as incongruent with workplace culture (Waters & Ussery, 2007). Thus, a therapeutic intervention that acknowledges occupational culture and mental health stigma while simultaneously advocating for the wellness and safety of law enforcement members is warranted.

Trauma-Informed Neurofeedback for Law Enforcement Officers

Unlike traditional talk therapy or mindfulness-based training, both of which prioritize emotional awareness, neurofeedback provides a noninvasive and nonverbal way to focus on neural activity and brain regulation. This form of treatment has proven to be successful in treating disorders and symptoms that are resistant to traditional therapy options (Demos, 2019). Although empirical research on mindfulness-based interventions reveals promising results (e.g., Christopher et al., 2016; Eddy et al., 2021; Grupe et al., 2021), neurofeedback training recognizes these studies' limitations by informing clients of the psychophysiological relationship between unconscious brain activity and mental health symptoms while being sensitive to any ingrained stereotypes and stigmas surrounding mental illness. Building upon the success of officer mindfulness-based research, individuals participating in neurofeedback are encouraged to take an active, independent role by becoming aware of their ability to regulate brain activity correlating with their presenting concerns. This type of client involvement complements law enforcement characteristics of independence and self-reliance as it stimulates individual learning and performance. Additionally, in this facet of neural-specific psychoeducation, individuals begin to not only understand the relationship between neurobiological activity and mental health diagnoses but client acceptance, empathy, and engagement in symptom-related strategic thinking are also promoted (Erk, 2000; Russell-Chapin, 2016).

In conjunction with the recommendations above, it is the belief of the authors that use of trauma-informed neurofeedback for law enforcement officers seeking mental health assistance can be a way to both destigmatize and reframe their fear of being perceived as unreliable by proactively attending to concerns. Research alludes to the helpfulness of utilizing a trauma-informed approach with police officers (Raver & McElheran, 2022). In this section, we present the use of neurofeedback and a trauma-informed framework for addressing the mental health concerns precipitated or exacerbated by the everyday work of law enforcement officers.

Neurofeedback for Occupational and Organizational Stressors

Police officers are routinely exposed to stressors and trauma in the course of their work, and the likelihood of developing PTSD or other related problems can increase as the exposure factors and stressors increase (Bishopp et al., 2019; Maguen et al., 2009). In addition, researchers have noted brain structural differences in individuals exposed to continued traumatic events which have been found to be correlated with symptomatology (Baldaçara et al., 2017; Bremner, 2006). To date, research literature regarding professions exposed to trauma and the professional fields themselves are reactive rather than proactive in implementing preventative measures (Lawson et al., 2022). Given that individuals in this field are susceptible to continued stressful situations and have an increased chance of developing a mental health illness, the deficit of preventive mental health options necessitates the need for accessible, evidence-based treatment options that address current mental health disorders while also building resilience.

Fortunately, research continues to provide evidence that neurofeedback offers therapeutic results by conditioning and working directly with brain wave activity. Neurofeedback uses operant conditioning principles which allow the client to train and control their brain. Its ability to target unhealthy neural pathways and reroute the signals into a healthy functioning network allows it to focus on the originating source of the symptoms rather than treating the surface indicators. Neurofeedback research has been conducted for a variety of mental health concerns, including PTSD (Romero et al., 2020; van der Kolk et al., 2016), anxiety (Gregory et al., 2020, 2023), and stress (Balconi et al., 2018; Hafeez et al., 2019). Utilizing neurofeedback both as a preemptive measure and as a posttraumatic-exposure therapy tool could also allow for faster recovery and long-term success rates.

Although scholars have studied the use of biofeedback, a self-regulation tool that empowers an individual to change physiological activity for the purposes of improving health and performance (Association for Applied Psychophysiology and Biofeedback [AAPB], 2008), this literature has primarily focused on performance enhancement strategies including physiological stress regulation (Brammer et al., 2021) and shooting performance (Gong et al., 2020). Currently, there is a lack of literature studying the impact neurofeedback has on members of the law enforcement population. Utilizing this form of neuro-informed counseling with law enforcement professionals might aid in decreasing certain symptomology developed from common occupational and organizational stressors. We identified several trends in the literature with implications for treatment and further research. In the following sections, we provide considerations

from the literature for training focused on the anterior prefrontal cortex, alpha and asymmetry training, and utilizing individualized neurofeedback protocols to address functional and structural brain changes resulting from exposure to traumatic experiences.

Implications for Prefrontal Cortex Training. Because law enforcement officers encounter ongoing occupational and organizational stressors, examining avenues that improve cognitive functioning in relation to anxiety, stress, and depression is warranted. The prefrontal cortex, located at the anterior-most portion of the frontal lobe, assists with executive and social-emotional functioning as it communicates with other cerebral structures (e.g., amygdala) to regulate thoughts, emotions, and behaviors (Demos, 2019). Specifically, the prefrontal cortex inhibits amygdala activity (top-down processing) to encourage appropriate responses to environmental stimuli (Demos, 2019). However, researchers continue to document that prolonged exposure to stress decreases the prefrontal cortex's ability to hinder inappropriate impulses resulting in increased emotional dysregulation, poor decision-making, and other mental health concerns (Arnsten et al., 2015; Rauch et al., 2006).

In an effort to understand the impact of trauma on the prefrontal cortex of law enforcement personnel, Kaldewaij et al. (2021) conducted a quasi-experimental, pre-post study design in which 185 police recruits participated in an emotional action control task that activated the anterior prefrontal cortex. Using functional magnetic resonance imaging (fMRI) to record neural activity and activation, the researchers tasked participants to maneuver a joystick depending on a specific positive or negative stimulus. Results indicated that improved emotional control and resiliency to posttraumatic stress symptoms were predicted when activating the anterior prefrontal cortex (Kaldewaij et al., 2021).

Neurofeedback training is another avenue shown to activate the prefrontal cortex while simultaneously conditioning a more desired and rational response to environmental factors. Although neurofeedback researchers have seen success in downregulating the amygdala at electrode sites outside of the frontal lobe (Keynan et al., 2019), other researchers articulate that training along the anterior dorsal (Fz), ventral (Fpz), or right prefrontal cortex (Fp2) might increase social behaviors and an overall sense of well-being (Demos, 2019). Further, other researchers examining the benefits of frontal neurofeedback training demonstrate positive results in alleviating depressive and anxiety symptoms when training frontal alpha asymmetry (Mennella et al., 2017) or cerebral areas located at either the left (Takamura et al., 2020) or right (Yu et al., 2021) dorsolateral prefrontal cortex. Due to the consequential relationship between the prefrontal cortex and reoccurring stress, clinicians integrating neurofeedback with law enforcement officers should consider alterations in frontal lobe activity when deciding on an efficacious training protocol.

Implications for Alpha Training and Frontal Alpha Asymmetry Training. Of particular interest for this population, scholars have identified a positive trend in improving PTSD indicators, anxiety, and related symptoms by training alpha brainwave activity (e.g., Gregory et al., 2020; Mennella et al., 2017; Wang et al., 2019). Professionals correlate alpha oscillations with "internal reflection, brain synchrony, and peak performance," (Demos, 2019, p. 25) as well as "meditation or a deep sense of inner calm" (p. 215). Further, research continues to demonstrate that while there is a positive correlation between these traits and the default mode network (Jann et al., 2009), alpha activity is reduced in the default mode network for individuals with PTSD (Clancy et al., 2020). Thus, several studies have examined the relationship between alpha training and decreasing PTSD symptoms (Nicholson et al., 2020; van der Kolk et al., 2016). For example, Romero et al. (2020) utilized van der Kolk's et al. (2016) PTSD neurofeedback protocol of decreasing 2–6 Hz and 22–36 Hz while increasing 10–13 Hz at sites T4 (active) and P4 (reference). Participants included 21 individuals who presented with primary trauma symptoms. Following a minimum of 15 biweekly 30-min neurofeedback sessions, the researchers discovered that participants showed statistically significant improvements in various areas including hyperarousal, avoidance, severity and frequency, identity diffusion, susceptibility to influence, and affect skill deficits (Romero et al., 2020).

Additionally, our review of the literature resulted in the identification of another form of alpha training with implications for the treatment of law enforcement officers. Frontal alpha asymmetry training, originally theorized by Davidson (1992), accounts for the differences in left (positive emotions and approach motivation) and right (avoidance and negative emotions) frontal region alpha power and their association with emotional reactivity and temperament. Neurofeedback researchers have aimed to use this training approach to decrease

anxiety and depressive symptoms (Choi et al., 2010; Mennella et al., 2017; Peeters et al., 2014). For instance, Mennella et al. (2017) provided neurofeedback training to 32 female participants divided equally into two experimental groups who either received training to increase frontal alpha asymmetry or mid-frontal alpha activity. After conducting five sessions, results supported a significant increase in alpha asymmetry compared to the active control group. Additionally, individuals who participated in the asymmetry group demonstrated a significant increase in resting alpha power at site F4, inferring a decrease in anxiety and negative affect (Mennella et al., 2017).

Results from studies such as these emphasize the potential use of alpha neurofeedback training and alpha asymmetry training to decrease PTSD and stress related symptoms commonly experienced by the law enforcement population. Similar to the recommendation of Fragedakis and Toriello (2014) related to utilizing neurofeedback for combat-related to PTSD, it is our recommendation that clinicians and researchers consider alpha and alpha asymmetry training when developing neurofeedback treatment plans for law enforcement officers. Integrating informed, empirically based neurofeedback protocols for officers can decrease maladaptive symptoms and the potential onset of comorbid concerns such as substance use (Hammond, 2007; Othmer & Othmer, 2009).

Implications for Individualized Treatment Protocols. Researchers have long demonstrated that exposure to traumatic experiences and subsequent PTSD-related symptoms can lead to neurobiological dysregulation and brain structural and functional differences (Bremner et al., 2006; Shucard et al., 2012). Despite inconsistencies in reported findings, commonly reported neuroanatomical abnormalities consist of reduced volume in the hippocampus (Karl et al., 2006; Starcevic et al., 2014), anterior cingulate cortex, and amygdala (Lyoo et al., 2011; Starcevic et al., 2014; Xiao et al., 2022) and alterations in cortical thickness in frontal and temporal areas (Bing et al., 2013; Geuze et al., 2008; Xiao et al., 2022). Several studies have explored this phenomenon with law enforcement officers (e.g., Baldaçara et al. 2017; Lindauer et al., 2004; Shucard et al., 2012). For instance, a neuroimaging study completed by Lindauer et al. (2004) found decreased total and left hippocampal volumes in trauma-exposed officers. Additionally, Baldaçara et al. (2017) documented a reduction of prefrontal thickness in military police officers with PTSD. Relatedly, Shucard et al. (2012) identified a greater likelihood that police officers' frequent exposure to traumatic events increased PTSD symptomatology and reduced brain structure volume. Together, this information supports the notion that individuals do not always experience exposure to stress and trauma the same in terms of symptomatology or structural and functional differences (Setroikromo et al., 2020). Thus, to acknowledge the array of diverse neurological presentations of a single mental health concern (e.g., PTSD, depression, anxiety, stress), our recommendation for improving brain function when structural differences are a concern is to utilize individualized neurofeedback protocols informed by quantitative electroencephalography (qEEG; Gregory et al., 2020, 2023). Prior to beginning neurofeedback treatment, the use of a qEEG can help identify an individual's standard brainwave patterns and the areas that would benefit from neurofeedback training. Utilizing qEEG assists clinicians in determining efficacious routes of treatment relating to an individual's specific cortical dysfunctions with presenting mental health symptomologies (Wigton & Krigbaum, 2015).

A Trauma-informed Framework

Due to the complex nature of their work with navigating diverse stressors, law enforcement officers often experience trauma and are exposed to traumatic situations. Trauma is the result of violence, loss, disaster, abuse, neglect, or otherwise harmful situations individuals are subjected to experience (SAMHSA, 2014). Trauma-informed care is the practice of staff awareness of trauma, the impact of services in use with trauma, and the incorporation of the knowledge around trauma into current practices (Hopper et al., 2010). The Substance Abuse and Mental Health Services Administration (SAMHSA), identified six core tenets to the informed approach including (a) safety; (b) trustworthiness and transparency; (c) peer support; (d) collaboration and mutuality; (e) empowerment, voice, and choice; and (f) cultural, historical, and gender issues. Each of these principles promotes rapport building and personal success to the trauma. Furthermore, several of the tenets can be associated with certain values and aspects found in the career of law enforcement such as safety, trustworthiness, peer support, and collaboration which encompass officer camaraderie and protecting one another. Understanding how these different principles align with law enforcement policies and values will provide counselors the ability to not only relate to this career mindset but incorporate a trauma-informed approach that increases well-being among law enforcement officers and their perceptions of trauma.

With trauma being perceived differently by every person, trauma-informed care considers the factors of the event, an individual's experience of the event, and the effect it has on the person (SAMHSA, 2014). Accompanied by law enforcement occupational demands, the individual perception an officer has concerning certain experiences might influence their sensitivity to trauma. Therefore, preventative measures have been taken by operating a trauma-informed framework with this population. Several studies have been conducted with the utilization of police officers using a trauma-informed framework when responding to victims (Lathan et al., 2019; Rich, 2019). However, limited research is shown on trauma-informed practices when working with police officers. For instance, Raver and McElheran (2022), propose several ways to incorporate a trauma-informed approach to reduce police misconduct and violence. We suggest an organizational change in trauma-informed approaches by police leadership and supervisors. Additionally, the authors advise to not use a "one size fits all" approach when training others on understanding trauma. Finally, we recommend a change in approach to the system by leaders in varying levels of police organization. We encourage having leaders learn more about trauma and building the skills to help other employees with traumatic events (Raver & McElheran, 2022). It is also our recommendation that clinicians utilize a trauma-informed framework when working with law enforcement.

Discussion and Implications for Future Research

We sought to present trauma-informed neurofeedback as a means to prevent and treat the mental health concerns often experienced by law enforcement officers. We synthesized previous literature which identified neurofeedback as a means to decrease symptoms such as anxiety (e.g., Gregory et al., 2020) and PTSD (e.g., Romero et al., 2020; 2023) while also recognizing the hesitation of law enforcement officers engaging in traditional mental health care (Jetelina et al., 2020). From our review of the literature, we discovered that researchers cited neurofeedback protocols that trained the prefrontal cortex (e.g., Kaldewaij et al., 2021; Takamura et al., 2020; Yu et al., 2021), alpha amplitude (e.g., Romero et al., 2020; van der Kolk, 2016), alpha asymmetry (e.g., Mennella et al., 2017), or utilized qEEG results to develop an individualized neurofeedback protocol as successful in decreasing negative symptoms often experienced by officers.

Although presented separately, we suggest that clinicians and researchers consider all the presented recommendations when creating neurofeedback treatment protocols. For instance, resources permitting, we suggest qEEG-informed individualized protocols as a standard for treatment planning, as each client will present with their own unique concerns and cortical presentations. When reviewing qEEG reports, clinicians may also consider the existing body of literature that identifies the significance of alpha and interhemisphere synchronicity for stress and trauma-related symptomology.

Further, when developing treatment protocols, we emphasize the need for communication with the client about their personal and occupational needs. Clinicians must consider the potential impact of alleviating adverse symptoms that protect officers while out in the community. For instance, heightened vigilance is often necessary as law enforcement job requirements demand repeated exposure to dangerous environments or situations. While mental health professionals regard hypervigilance as a presenting mental health phenotype, it would be dangerous and potentially unethical for clinicians to conduct brain modulation training without knowing possible risk factors for this occupational population. Through this lens, we emphasize caution be taken and encourage one to conceptualize presenting concerns and treatment planning with the unique needs of these professionals. It may be advantageous for the clinician to periodically check in to assess if the training protocol is having the desired effects and is not interfering with their ability to execute work-related tasks.

Finally, this article primarily focused on the occurrence of PTSD and stress-related symptoms in law enforcement officers and the use of trauma-informed neurofeedback for treatment purposes. It is important for counselors to be aware of the high rates of anxiety and depression with this population. We recommend future researchers to explore and consider the diverse array of mental health implications that often accompany the law enforcement career path. We also suggest researchers examine the presentation of officers across various units (e.g., homicide, Special Weapons and Tactics [SWAT]) such as using qEEG software to inform individual and group biomarkers or develop neurofeedback treatment plans.

Conclusion

While there is a surplus of literature recognizing the negative repercussions of occupational and organizational stressors, there continues to be a lack of research proposing techniques that encourage officer well-being. Clinicians using therapeutic interventions must be mindful of the distinct components found within the profession, including exposure to dangerous and traumatic events, training competencies, and workplace stigmas. Building from previous mindfulness-based interventions, neurofeedback could greatly benefit those serving in this occupation in that this form of biofeedback attends to these components. Because neurofeedback encourages client self-regulation, officers can take an active, independent role in their improvement. Additionally, utilizing a trauma-informed framework builds upon neurofeedback by supporting client well-being through trustworthiness, collaboration, and empowerment. By providing these services, counselors are encouraging officers to reframe their beliefs surrounding seeking mental health and advocating for their needs. In conclusion, the hope of integrating neurofeedback with a trauma-informed framework as a normalized, therapeutic intervention would provide preventative and holistic care as well as promote the well-being of the officer, the profession as a whole, and the communities being served.

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