

Mindfulness-Based Psychotherapy Approaches for First Responders: From Research to Clinical Practice

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First responders are psychosocially burdened with work-related stressors that occur frequently during required duties. Related mental health difficulties, such as direct and vicarious trauma, depression, and interpersonal problems often affect first responders' ability to perform effectively, and their personal lives may be disrupted. Mindfulness-based interventions have been shown to directly promote first responders' mental and physical health while providing increased resilience when facing work-related stressors. This article summarizes mindfulness-based benefits and empirical research related to first responders, using law enforcement

officers as one specific example. Two specific mindfulness-based psychotherapies are introduced, as are generalizable mindfulness techniques useful for first responders. Psychotherapists can use these empirically supported treatment approaches to help first responders understand and incorporate awareness-based, nonjudgmental, and present-centered mindfulness techniques during critical incidents and while off duty as resilience-building mechanisms.

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First responders are often exposed to a plethora of critical incidents in the line of duty. Critical incidents may entail different types of events that are potentially traumatic and life threatening. Thus, exposure to trauma and stress is pervasive among first responders. For example, many researchers have emphasized that stressful and traumatic experiences are prevalent among first responders who deal with critical incidents over the course of their careers (1–3). Significantly, it is estimated that urban police officers may be exposed to an average of more than 900 potentially traumatic incidents during their careers (4). Moreover, first responders may experience stress and trauma in the line of duty either directly or indirectly; for example, a paramedic may transfer a severely injured person to the hospital (direct exposure) and a police officer may investigate child pornography cases through a review of documented evidence (indirect exposure).

Compassion fatigue, another construct studied in the scientific literature, refers to the cost of caring experienced by first responders who are expected to support victims of crimes, and other severe incidents (e.g., wounded individuals, battered women, abused children, abused elders; 5, 6). Moreover, first responders may often have to defend themselves against violent individuals, and in other cases they may have to support victims of accidents or gruesome crimes (e.g., natural disasters, car accidents, domestic violence). As an example, in the mass school shooting in Newton, Connecticut, the first caregiving professionals who responded to the incident were obligated to show compassion to the

victims, for example by providing support to severely wounded children (7). It is important to note that the stress experienced by first responders is not only operational (i.e., caused by exposure to required duties of the job). First responders may also experience organizational stress that, in combination with operational stress, may be detrimental to health and well-being (8–10). First responders may experience multiple acute stressors in the line of duty and, in addition, have to deal with an authoritarian supervisor or need to complete unwieldy documentation after a critical incident.

Despite the obvious stress and trauma experienced by first responders in the line of duty, research has shown that first responders are significantly more resilient than the general population. Analytic research comparing first responders and civilians exposed to the September 11, 2001, terrorist attacks showed that first responders were less likely to experience posttraumatic stress disorder (PTSD). They were also found to recover faster than civilians (11). Other researchers (12–16) found that first responders are overall more resilient than civilians in other ways as well. Resilience among first responders is likely derived, in part, from first responder organizations' recruitment and training policies. Specifically, most first responder organizations in the United States, Canada, and Europe administer certain psychological assessments to new recruits; in this way, new recruits with high risk or elevated types of psychopathology may be excluded from the remaining recruitment procedure. Analogously, many police departments in North America and Europe have developed, in collaboration with academic and mental health

professionals (e.g., psychologists, psychiatrists, education experts), evidence-based resilience promotion tactical training protocols aimed at preparing first responders psychologically and physically for emergency duties (17, 18).

Even though first responders are resilient and trained to handle critical incidents effectively, long-term exposure to severe critical situations may evoke health-related costs for first responders. This scenario is heightened if first responders' psychosocial issues remain hidden and untreated. Indeed, research with first responders has demonstrated that they are more likely to have mental and physical health issues than civilians (16, 19–21). More specifically, pioneering research work conducted by Violanti et al. (21, 22) highlighted that first responders are at high risk of experiencing certain physical health issues (e.g., cardiovascular diseases, high blood pressure, diabetes, cancer) and psychological health issues (e.g., PTSD symptoms, depression, disrupted sleep). Similarly, many studies have concluded that first responders' stress-related hormone (cortisol) is dysregulated, which may over time lead to an elevated risk of many physical health issues (23–27).

MINDFULNESS, STRESS, AND VICARIOUS TRAUMA AMONG FIRST RESPONDERS

First responders are expected to perform their duties with fluidity and adaptability. They may be called to respond to multiple critical incidents at any point in time during a shift. Thus, first responders must be capable of being mentally prepared to respond to a new emergency call after having very recently responded to a critical incident. Therefore, there is a point between critical incidents when first responders need to reset and get into a mental zone that will allow them to be psychologically prepared to respond to the next critical incident (19). If first responders are not prepared for an emergency call after leaving the scene of a critical incident, it may be the result of preoccupation with the last incident's conditions. In such cases, certain cognitive processes (e.g., "I failed to do this," "I should do this next time," "I would have been dead") may be evoked, and emotional reactivity (e.g., anger, frustration, agony) could be heightened during future experiences. In such a case, first responders could lack the clarity of thought to make the right decision (e.g., to shoot or not shoot); hence, they may jeopardize their own lives as well as those of civilians. Moreover, first responders are often mandated to support crime victims (e.g., battered women, abused children) immediately after having handled a violent offender (e.g., a man who assaulted paramedics with a knife). Therefore, first responders should be capable of maintaining the role of a street fighter as well as that of a social service worker during emergency calls (28, 29).

It is important to note that first responders have personal lives in which they are expected to undertake roles such as parent, partner, or friend at the end of their shift (30). Consequently, any residual negative thoughts or emotions that officers take home with them from their experiences in

the line of duty should ideally be processed and assimilated by the time first responders return home. Researchers have addressed the aforementioned challenges experienced by first responders (31) and examined ways that would allow them to attain mental preparedness when responding to emergency calls, thwarting the incapacitating residual effects resulting from exposure to previous critical incidents (17, 18). Researchers have increasingly instructed first responders to practice certain mindfulness-based techniques to help them maintain contact with the present moment. That is, first responders could use mindfulness-based techniques to better manage negative thoughts and emotions that would otherwise be detrimental to their job performance and personal lives (29, 32).

Significantly, researchers (33, 34) have highlighted the deeply interconnected relationship between mindfulness and PTSD among first responders. Indeed, the major clusters of PTSD symptoms (e.g., intrusive thinking, avoidance, trauma-related triggering cues, flashbacks) refer to the characteristics of past traumatic incidents that first responders may reexperience (35). Unfortunately, such symptoms permeate first responders' present and may preclude them from being mindful and emotionally aware of the nature of their suffering (36, 37). Researchers have concurrently emphasized the catalytic role of mindfulness practice in promoting resilience among first responders, in helping them increase emotional intelligence, and in achieving substantially quicker recovery after exposure to potentially traumatic incidents (37–39).

OVERVIEW OF MINDFULNESS

Mindfulness practice is not new—it has been practiced for thousands of years. In Western culture, mindfulness has attained exponential interest over the past several decades as a result of increased exposure generally and accumulating positive research results (40). *Mindfulness* generally refers to the unequivocal moment-to-moment awareness that allows one to be fully conscious and emotionally aware (40, 41). Many people are often mindless and, hence, absorbed in daydreaming as various thoughts and emotional reactions pass through their experiences continuously on a subconscious level, preventing them from gaining a fully conscious influence over their current circumstances. Moreover, individuals often perform certain routine activities in a habitual, automatic, and superficial way, without being mindful of what, why, or how these behavior patterns affect them personally (40).

Regular mindfulness practice, however, can help one to gradually have more and more impact in life even during challenging events because of the human capacity to be aware, nonjudgmental, and accepting of the moment (42). Mindfulness does not refer to a passive attention to the moment-to-moment experience of life; rather, it refers to awareness that encompasses a compassionate and flexible perspective, allowing one to experience emotions, cognitions, and physical sensations in the here and now (38, 41).

Therefore, the individual does not attempt to escape from or avoid pain but rather focuses on the experience of pain and the discomfort that pain entails, hence increasing the individual's capacity to explore, accept, and bear pain-related experiences.

Mindfulness may be practiced in certain activities of life without disrupting one's daily routine (43). For instance, a police officer may notice the sensation of walking during a foot patrol. Similarly, a paramedic may focus his or her attention on the taste of the meal during a lunch break. A firefighter may pay attention to the surroundings while sitting at the base between critical incidents. Thus, mindfulness may be practiced for brief periods of time (e.g., minutes, seconds, or even a single moment) and many times during a day without requiring rescheduling. Moreover, it may be practiced while playing sports or during meetings with friends (43). When additional time and environmental conditions warrant it, mindfulness meditation can be used to reinforce calmness, relaxation, knowing one's bodily experiences, and gaining insight (40, 42). To date, mindfulness practice has been extensively studied and successfully applied to many domains; hence, its application can help first responders improve their performance and better manage stress and trauma (44, 45).

RESEARCH OUTCOMES FOR MINDFULNESS AMONG LAW ENFORCEMENT OFFICERS

A thorough literature review was conducted to find empirical research studies examining mindfulness-related health outcomes specific to law enforcement officers. This population was elected because of the need to better understand stress and trauma among officers, the high psychosocial burden inherent in law enforcement work, and recent events highlighting the increasingly negative experiences officers face. We conducted a search on the broad keywords *mindfulness* and *police* in the following academic databases: Academic Search Complete, Criminal Justice Abstracts, Criminal Justice Periodicals, Citation Indexes, Cochrane Library, Dissertation & Theses Full Text, JSTOR, MEDLINE, Psychology and Behavioral Sciences Collection, PsycINFO, Social Sciences Citation Index, and SocINDEX. Two cross-sectional, one longitudinal, and two experimental design studies were found. In addition, one cross-sectional empirical study exploring mindfulness and health outcomes among university criminal justice majors was located (46). We included this study in our review, under the assumption that some participants intended to seek law enforcement careers. Table 1 shows the citations (32, 33, 38, 39, 46, 47), overviews, and main findings of these studies.

All the researchers found positive attributes of mindfulness concerning the law enforcement officer population. Specific mindfulness traits (i.e., acting with awareness, accepting without judgment, describing one's experiences) were inversely related to PTSD symptoms among police officers, and overall mindfulness was negatively related to

aggression and hostility among criminal justice majors. Greater mindful accepting without judgment emerged as a salient trait, uniquely predicting less avoidance, hyperarousal, and intrusion-related PTSD symptoms, but also less posttraumatic growth. *Posttraumatic growth* refers to changes after traumatic events such as experiencing enhanced perceptions of appreciation for life, spirituality, personal relationships, and personal strength (48).

The direction of the relationship between mindful accepting without judgment and posttraumatic growth appears somewhat counterintuitive. However, consider that higher levels of PTSD symptoms have been consistently associated with greater levels of posttraumatic growth in police and related populations, indicating that posttraumatic growth is not related to improved health outcomes (49, 50). Another interesting discovery is that although most mindfulness traits were inversely related to PTSD, mindful observing demonstrated positive associations with avoidance, intrusion, and symptoms of hyperarousal. Significant positive relationships between mindful observing and PTSD have also been reported in non-police populations (51). As a result, it is imperative to consider that some aspects of mindfulness may not be related to positive health outcomes.

The one longitudinal study found that officers who demonstrated greater ability to identify emotions, display overall mindfulness, and avoid thought suppression experienced significantly fewer depressive symptoms after one year of service than less mindful officers. Thus, officers possessing mindfulness traits were better protected from the negative impact of occupational stress, at least early in their careers (52).

Regarding experimental studies, officers participating in mindfulness-based resilience training (32, 47) experienced significantly reduced stress, anger, burnout, fatigue, and sleep problems and enhanced emotion regulation. Mindful non-judgment and acting with awareness emerged as the salient factors associated with reduced stress among the police officers studied. Mindfulness-based resilience training is an 8-week experiential program, modeled after mindfulness-based stress reduction (53), that has been modified specifically for use with law enforcement officers. This program teaches and facilitates aspects of mindfulness such as attentive awareness during personal (e.g., eating meditation) and occupational (e.g., sustained attention on breathing and bodily sensations while performing stressful work duties) experiences. Thus, both dispositional and practiced mindfulness skills have been found to be beneficial to the health of law enforcement officers.

SPECIFIC MINDFULNESS PSYCHOTHERAPIES FOR FIRST RESPONDERS

As noted earlier, accepting without judgment and acting with awareness have thus far emerged as the most salient mindfulness traits specific to first responders such as police officers. Also important, recent research has suggested that the

TABLE 1. Summary of empirical research studies on mindfulness among law enforcement officers^a

Citation	Study design	No. of participants	Mindfulness instruments	Findings
Bergman et al. (47)	Experimental, using 8-week MBRT	47 police officers	FFMQ	Increased mindful nonjudging and acting with awareness resulted in reduced anger. Increased mindful nonjudging resulted in reduced operational stress. Increased mindful acting with awareness reduced organizational stress.
Christopher et al. (32)	Experimental, using 8-week MBRT	62 police officers	FFMQ, Mindfulness Process Questionnaire	Participants experienced lower sleep disturbances, burnout, fatigue, emotion regulation problems, anger, operational police stress, organizational police stress, and general stress.
Chopko & Schwartz (33)	Cross-sectional	193 police officers	KIMS	PTSD intrusion symptoms were inversely associated with mindful acting with awareness and accepting without judgment. PTSD hyperarousal symptoms were inversely associated with mindful acting with awareness, accepting without judgment, and describing. PTSD avoidance symptoms were inversely associated with mindful acting with awareness and accepting without judgment. Mindful observing was positively associated with PTSD hyperarousal, avoidance, and intrusion symptoms. Greater avoidance and intrusion PTSD symptoms were uniquely predicted by lower mindful accepting without judgment. Greater hyperarousal PTSD symptoms were uniquely predicted by lower mindful accepting without judgment and describing.
Kelly & Lambert (46)	Cross-sectional	272 undergraduate criminal justice majors	MAAS	Mindfulness was negatively associated with aggression and hostility and positively associated with thought recognition.
Williams et al. (39)	Longitudinal; subjects tracked from police academy through 1 year of police service	60 police officers	MAAS, Acceptance and Action Questionnaire, Toronto Alexithymia Scale, White Bear Suppression Inventory	Officers more likely to be mindful, identify their feelings, and not suppress thoughts exhibited fewer depression symptoms after 1 year of police service compared with less mindful officers.
Chopko & Schwartz (38)	Cross-sectional	193 police officers	KIMS	Greater mindful accepting without judgment significantly predicted lower posttraumatic growth.

^a FFMQ, Five Facet Mindfulness Questionnaire; KIMS, Kentucky Inventory of Mindfulness Skills; MAAS, Mindful Attention Awareness Scale; MBRT, mindfulness-based resilience training; PTSD, posttraumatic stress disorder.

manner in which one mindfully observes plays a substantial role in the mental health outcomes experienced. For example, Desrosiers et al. (54) found that observing nonreactively, an adaptive cognitive emotion regulation strategy, is associated with fewer anxiety and mood disorder symptoms than observing reactively. As outlined by Desrosiers et al., those who react directly after their observations with worry, rumination, and negative judgment are likely to experience heightened mental distress. First responders who react immediately to trauma-related bodily sensations (e.g., PTSD hyperarousal symptoms) with worry about the implications of the experience, for example, may ultimately experience greater health symptoms. That is, first responders' heightened ability to observe internal and external stimuli alone may not be beneficial; rather, they may potentially be counterproductive.

More specifically, the quality of the response to the observation may be key in achieving positive outcomes.

Collectively, teaching first responders to act mindfully with awareness, accept experiences without judgment, and observe nonreactively may serve to make them more resilient to the effects of occupational stress, including traumatic stress. Regarding the amenability of first responders to participate in mindfulness-related training, a study by Manzella and Papazoglou (29) found that senior police trainers were receptive to practicing mindful awareness exercises with the goal of stress management. In addition, the macho-oriented norms of the policing profession may be maintained by relating that mindfulness awareness skills and breathing exercises have been taught to U.S. military personnel, including Marines and Navy SEALs, to foster

resilience to combat stress and improve performance in the field (55, 56).

First responders routinely respond to situations that provoke emotional and physiological reactions. For example, an officer may be threatened with a weapon or witness a horrific crime scene that elicits intense hyperarousal responses, yet minutes or hours later be expected to maintain a calm, courteous, and professional demeanor while issuing a routine traffic citation. Thus, the ability to effectively regulate emotional responses is an essential skill for first responders. Relatedly, Lutz et al. (57), using functional MRI technology, found that participants taught to use mindful present-moment nonjudgmental awareness and openness to experience during exposure to distressing stimuli experienced more effective emotion regulation at the neural level than a control group. Practicing these mindfulness skills increased activity in regions of the brain dealing with concentration on bodily sensations and emotions but decreased activity in regions such as those involved with fear processing. Thus, nonjudgmental acceptance and awareness proved effective at attenuating emotional arousal. The potential implications for first responders include strengthened community relationships as a result of the ability to provide more effective and professional services to the citizens they are sworn to protect. In addition to helping promote resilience, which has an impact on occupational stress and aids emotion regulation, mindfulness-based therapies such as Acceptance and Commitment Therapy (ACT) and mindfulness-based cognitive therapy (MBCT) hold great promise for the treatment of first responders diagnosed with stress-related disorders.

Acceptance and Commitment Therapy

ACT is a mindfulness-based healing approach that uses concrete cognitive and behavioral strategies to help individuals learn how to perceive and act on internal and environmental information differently. In ACT, mindfulness can be understood as the convergence of acceptance, contact with the present moment, and noticing of the self. These mindfulness processes lead to commitment and behavior change processes, including changing values and committed action (58). In his overview of key principles, Twohig (59) explained that ACT uses a contextual model within treatment. Elements of life events are not studied in isolation because doing so may disregard important contextual elements of individuals' actions. Knowing the function of one's actions within the larger context is important to successfully intervene. This concept also applies to all inner experiences (e.g., thoughts, feelings, bodily sensations). None are inherently problematic or positive; rather, in ACT theory they simply relate to how they function for the person. One core goal of ACT is helping individuals develop psychological flexibility. This is the ability to fully stay in contact with the present moment and inner experiences and, depending on the context, persist or change in the pursuit of goals or personal values. It is the opposite of psychological inflexibility, which can lead to defensiveness and restriction and may

generate psychopathology (60). ACT can thus be described as a model that uses acceptance and mindfulness processes as well as commitment and behavior change processes to produce psychological flexibility.

ACT has been shown to result in a variety of positive effects. In a recent meta-analysis of ACT-related empirical research, Hacker et al. (61) explained that ACT has garnered a substantial evidence base. Their systematic and meta-analytic review suggested that compared with control conditions ACT is effective specifically when focusing on depression and anxiety. Findings showed that ACT demonstrates at least moderate group and pre-post effects for symptom reduction in both anxiety and depression. A second meta-analysis conducted by A-Tjak et al. (62) demonstrated that among 39 randomized controlled studies, ACT outperformed control conditions at posttreatment and was superior to a waitlist, a psychological placebo, and treatment as usual. ACT was also superior for life satisfaction and quality measures. Findings indicated that ACT is more effective than treatment as usual or placebo and that ACT is effective in treating anxiety disorders, depression, addiction, and somatic health problems. In fact, ACT has been shown to result in positive effects on a variety of mental conditions through an online format (iACT) for persons who cannot or are not willing to engage in face-to-face psychotherapy. Lappalainen et al. (63), using a seven-week pretest-posttest control group experimental design, found that iACT demonstrated positive effects over a control group on depression symptomatology, psychological and physiological symptoms, psychological flexibility, mindfulness skills, frequency of automatic thoughts, and thought suppression. The treatment effects were maintained over a 12-month follow-up period, and participants reported that they would recommend the same intervention to others. In addition to being an empirically supported treatment for clients with psychosocial issues such as those faced by first responders, ACT has also been shown to increase psychological flexibility and other core healthful aspects among psychotherapists themselves. For example, a two-day standard continuing education workshop on ACT increased psychological flexibility and personal accomplishment and reduced burnout among psychotherapists learning the approach. Thirty-minute phone consultation sessions after trainings led to even higher psychological flexibility three months afterward and appear to be a feasible means of improving psychotherapist psychological flexibility (64).

Mindfulness-Based Cognitive Therapy

MBCT (65) integrates mindful meditation and cognitive-behavioral therapy techniques; it was originally developed to treat recurrent or resistant depression. MBCT has since been extended to a wide range of populations and diverse delivery formats and settings. MBCT has been empirically shown to effectively lessen depressive symptoms, several forms of anxiety, and other symptomatology that first responders may face during their career. In addition, research

has demonstrated that MBCT can lead to increased ability to concentrate (66), metacognitive awareness (67) and de-centering (68), and decreased dysfunctional attitudes (69). These qualities have the potential to significantly improve not only first responders' effectiveness on the job, but their personal functioning as well. For example, increased ability to concentrate and metacognitive awareness can help first responders learn a more objective, comprehensive, and thoughtful (rather than hyperfocused and reactive) approach to responding during critical incidents. A decentering ability with decreased dysfunctional attitudes (e.g., about perpetrators, victims, or the organization) can help first responders learn to detach work from their personal lives so that significant relationships are not negatively affected and burnout is reduced.

MBCT is meant to reduce distress, such as depression and other symptoms of mental disorders, by changing the nature of individuals' relationships to negative thoughts and emotions. Mindfulness is proposed as a way to decrease cognitive reactivity to these negative events through repeated practice with triggering content on a regular basis (65). "Unlike CBT, there is little emphasis in MBCT on changing the content of thoughts; rather, the emphasis is on changing awareness of and relationship to thoughts" (70, p. 54). MBCT treatment studies have shown that rumination is negatively correlated with mindfulness (71), self-reported mindfulness improves significantly over the course of MBCT (72), and mindfulness seems to be a primary active ingredient in MBCT (73).

In MBCT, mindfulness practice is usually assigned for home practice each day, and most of each session focuses on the mindfulness component. However, there are other potentially active ingredients in MBCT, including cognitive-behavioral and psychoeducational interventions and group support during MBCT group psychotherapy. In general, the mindfulness experience of both psychotherapists and clients were found to be predictive of positive outcomes in mindfulness-based interventions (74), and the regularity of mindfulness practice post-MBCT treatment is related to long-term outcomes. In addition, the frequency of mindfulness practice during MBCT, specifically three times a week or more, relates to longer term symptom reduction (75).

GENERALIZABLE MINDFULNESS-BASED STRATEGIES FOR FIRST RESPONDERS

Generalizable characteristics of mindfulness-based approaches originate from Eastern cultures. Confucianism stresses aspects of well-being and education, including the concepts of connection with those in the outside world, how to best live in the world (vs. self-advancement), and the malleability of human nature. Confucianism blends smoothly with Taoism, stressing a deep appreciation for the changing nature of life, the need to see one's self and the world as a whole, and living a virtuous life. Buddhism incorporates aspects of harmony, holism, the interrelationship of all that exists, and the elimination of suffering (76). All of these

guiding principles can be helpful for first responders in particular given the spontaneous critical incidents, difficult persons, feelings of helplessness, and lack of predictability they cope with daily. Understanding the basis of mindfulness-based philosophies underpinning the practical approaches can help first responders break free from their stressful and often mentally constricting circumstances. That is, mindfulness offers an approach to living in addition to an approach to psychotherapy.

In general, mindfulness theory explains that one's mind takes on the qualities of what one dwells on. When someone expends effort struggling against something that is difficult or painful (e.g., a distressing experience during a critical incident), that person devotes more energy to the experience, thus strengthening it in her or his mind. Acknowledging the experience, then accepting it as something one has gone through in the past and letting it go allows the experience to not become stuck mentally. As Nhat Hahn (77) shared, struggling individuals must practice acceptance to progress without struggle. Regardless of specific mindfulness-based psychotherapy approaches, the following principles apply to work with first responders: developing calm, clear awareness; practicing present-moment and meditative exercises; learning acceptance; and cultivating self-compassion (78).

Developing calm, clear awareness involves being connected with what one experiences without judgment. When first responders are afraid, they know that they are afraid. As Bien (78) stated, it takes little effort to feel sad when one is sad and angry when one is angry. Yet most people spend a great deal of effort trying to be unlike themselves. If first responders do so, they may be "worse off than if they knew nothing about mindfulness" (p. 52). Present-moment and meditative exercises should be practiced throughout the day. Meditation, a form of purposeful focused attention, can be practiced during any activity rather than as an isolated and mechanical technique. One can be in the present moment with focused attention on one's mind while eating, walking, speaking, and even during a critical incident. Learning acceptance does not imply passively submitting to one's circumstances. "When you accept deeply the reality in which you find yourself, you know what to do and, just as importantly, what not to do" (78, p. 55). This skill is important for first responders while on duty. Regardless of what someone wishes a situation to be, in the present moment the situation is exactly what it is. Accepting that fact, as difficult as it is during painful and confusing circumstances, is key to consciously responding as skillfully as possible. If one refuses to accept what is happening in the here and now, one may be acting on distorted and self-focused (rather than holistic and other focused) information based on regret about the past or fantasizing about the future.

Finally, self-compassion is especially useful for first responders because it includes loving-kindness toward one's self during difficult situations. Because first responders inevitably face situations in which prediction and control are lacking, feelings of remorse, guilt, anger, hopelessness, and

helplessness may be evoked. Understanding this fact, showing support for one's self, and believing in one's intentions to help regardless of the hoped-for outcome can lead to a sense of self-caring needed during distressing events (78). As Desmond (79) explained, psychotherapists can help clients develop a more loving, kind, and forgiving attitude through self-compassion, and those with mindfulness experience will find that self-compassion practices have the capacity to add new layers of depth to mindfulness-based psychotherapies.

Certain neurological pathways have a direct impact on the negative experiences of first responders, and mindfulness influences these pathways. One human default mindset involves tracking the environment for possible threats (80). Because of the nature of their duties, first responders may have a heightened sense in this regard. The background experience of this mindset is a feeling of mild to moderate anxiety that keeps one vigilant. A secondary consequence is being overly cautious, uneasy, and physically tense. In addition, human neural pathways are hardwired to focus on and be affected by negative events more than positive ones. For example, it is easy for first responders to acquire feelings of learned helplessness while on duty, but it is difficult to undo those experiences even with many successful outcomes (81). Through neural plasticity, the mind then internally simulates these negative experiences and reinforces them as building blocks for future mental activity (82). Ultimately, these neurological pathways continually stimulate the sympathetic nervous system in first responders, maintaining a moderate to heightened flight-or-fight response. Emotions intensify; the amygdala (which is hardwired to focus on negative information and react intensely to it) is triggered; limbic and endocrine system activation increases, causing one to become hypersensitive to fear and anger; and ultimately prefrontal cortex executive functioning decreases (83). This scenario is typically the opposite of what would be required for a thoughtful, calm, and mindful response during a critical incident.

Hanson (83) explained that one of the most effective ways to enhance mindfulness is to activate the parasympathetic nervous system (PNS). As opposed to the sympathetic nervous system, the PNS, or "rest-and-digest" neural pathway, can help first responders more fully understand a situation and act with intention (both grounded in the prefrontal cortex), maintain steadiness of mind during difficult circumstances, and dampen the stress-response system, leading to increased relaxation and tranquility. Research has shown that psychotherapists can use the following generalizable mindfulness techniques to promote these qualities, in addition to many other benefits such as cardiovascular health, immune system strength, gastrointestinal health, and broader nervous system efficiency (83).

Large, Deep Exhale

This method takes less than one minute to complete and can be accomplished in any location. Inhale as much air as

possible, hold the breath for at least several seconds, and then exhale slowly. This technique expands the lungs more than usual, stimulating the PNS (which governs exhalation).

Diaphragmatic Breathing

This method uses the muscle beneath the lungs and takes one to two minutes. It is highly effective for reducing stress. Place one's hand on the diaphragm, the area of one's stomach approximately two inches beneath the center of the rib cage, and breathe deeply so that the hand moves perpendicularly to the chest. The most effective way to use this technique is to breathe in through the nose and out through the mouth, which cools the hypothalamus and activates the PNS. Watching the diaphragm sensitizes one to how it works, and this exercise trains the diaphragm to function fully.

Progressive Relaxation

Progressive relaxation takes about 10 minutes to complete through a systematic focus on different parts of the body. This method involves bringing awareness to each body part patiently and successively, noticing sensations as they occur. Each body part is then consciously relaxed. Focus on larger sections of the body first (e.g., legs, arms, shoulders) and, if time permits, move to smaller body parts (e.g., eyes, fingers, head).

Mindfulness Imagery

This method takes about 10–15 minutes to complete. It focuses on developing mental activity such as pictures and scenery that evoke relaxation and present-centeredness. Mindfulness imagery almost immediately stimulates the PNS. Close the eyes and relax the body while visualizing a calming tranquil environment. The more physical senses that are included in the experience (e.g., seeing, hearing, touching), the more PNS activation will occur because imagery enhances right hemisphere processing related to nonverbal behaviors.

CONCLUSIONS

First responders are psychosocially exposed to work-related stressors that occur frequently during required duties. Direct and vicarious symptoms of stress and interpersonal problems often affect first responders' ability to perform effectively and may have an impact on their personal lives. Mindfulness-based psychotherapies such as ACT and MBCT have been shown to directly promote first responders' mental and physical health while providing increased resilience when facing work-related stressors. Generalizable mindfulness-based techniques can be used by psychotherapists, regardless of the specific theoretical approach chosen, to increase self-awareness, promote intentional responses, enhance self-compassion, and ultimately decrease suffering. Specific and easy-to-use mindfulness techniques can activate the PNS and reinforce a positive experience even in difficult situations by dampening the natural sympathetic nervous system and

other potentially negative neural pathways that are prominent when someone encounters a critical incident. Incorporating mindfulness-based prevention and healing can therefore help psychotherapists build resilience and reduce symptoms of mental illness that are increasingly pervading the field.

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