

Potential of Mindfulness and Art Therapy for Emergency First Responders

Kayla M. Sweet

Indiana University South Bend

### Potential of Mindfulness and Art Therapy for Emergency First Responders

The percentage of emergency first responders suffering from mental health issues due to their profession is alarming. Between 5.9 and 22 % of emergency first responders experience psychological trauma, 37% contemplate suicide, and 87% experience critical stress (Flannery, 2014; Newland, Barber, Rose, & Young, 2015). There seems to be little in place to assist this population regarding bettering their mental health. This problem could be due to a variety of personal and professional barriers that first responders experience and the stigma associated with seeking mental health help. This population has been largely ignored in mental health research and experiences a lack of support for mental health programs within individual departments (Newland et al., 2015). The purpose of this research is to take a more in-depth look into the unique mental health challenges of those in first responder professions, briefly overview some of the systems currently in place to assist them and explore the idea of using mindfulness and art creation to benefit this population. This review covers mindfulness interventions, art therapy interventions, and interventions that integrate the two fields in addition to discussing the potential that each of these areas has in terms of providing first responders with positive coping methods and strengthening psychological resilience. This review also pleads for the inclusion of emergency first responders in the growing body of trauma research.

A positive element of cumulative exposure to trauma experienced by emergency first responders is the unique opportunity for posttraumatic growth, which can positively shift their view of the world, if they have developed adequate coping skills and behaviors before traumatic exposure (Chopko & Schwartz, 2009). Mindfulness is related to posttraumatic growth because it is necessary for people to pay attention to their traumatic memories, process them, and make meaning from them to move forward psychologically (Chopko & Schwartz, 2009). Another aspect of posttraumatic growth involves the exertion of psychological control over the traumatic

event to cope (Chopko & Schwartz, 2009). Mindfulness may be helpful for attention and observance of emotions and memories (Chopko & Schwartz, 2009). Art therapy may give participants the ability to make meaning of and exert control over their experiences through the manipulation of art materials (Artra, 2014). Therefore, these methods may be helpful for encouraging posttraumatic growth. Due to the complementary effects of these methods within people who have experienced trauma, they will be included in this literature review as stand-alone methods as well as integration techniques that could be useful approaches for addressing mental health problems within emergency first responders.

### **Mental Health Concerns for First Responders**

Emergency first responders are the first people to arrive at a scene of a crisis. They are exposed to the after-effects of violence on a regular basis in addition to the devastating effects of natural and accidental catastrophes. This cumulative exposure to secondary trauma, which is trauma experienced indirectly through witnessing the after-effects of an event or hearing the recounting of a traumatic event as told by someone who experienced it, could lead to mental health struggles (Diaconescu, 2015). “Emergency first responders” includes police officers, deputy sheriffs, firefighters, paramedics, rescuers, volunteer workers, emergency medical responders, and any other personnel who are among the first to arrive at a scene of a natural or manmade catastrophe. Emergency first responders are at risk of developing a plethora of mental health problems including stress and trauma-related disorders such as post-traumatic stress disorder (PTSD), complex post-traumatic stress disorder (C-PTSD), anxiety, and depression (Jackson, 2017). This increased risk of developing a mental health disorder is due to the high psychological demands required of those working as emergency first responders, which involves helping others in desperate times and cumulative exposure to secondary trauma (Flannery, 2014).

For first responders, some calls are minor and uneventful, while others are more disturbing and take much longer to recover from psychologically. An article regarding the Sandy Hook Elementary shooting that occurred in 2012 featured statements from first responders at the scene that showcase the difficulty of responding to a traumatic call. A 35-year-old male from the Sandy Hook firehouse said, "It's the worst tragedy that I've ever seen in this town or I've ever personally been involved with," followed by "It takes a toll on you. It's a very stressful situation. This is something that sticks with you for weeks, months, the rest of your life" (Higgins, 2012). If some calls are so devastating to first responders that they stay with the person long-term, it makes sense that first responders experience more work-related psychological difficulties than the general population. While witnessing trauma is unavoidable for first responders, there may be methods that can strengthen the mental resilience of first responders and provide positive coping techniques so they can efficiently process traumatic events.

Substance abuse, family breakdown, and suicidal tendencies are other potential side effects of the stressful work that is required of emergency first responders. For example, alcohol abuse among police officers could be as high as double that of the general population because it is seen as an acceptable form of coping by those within the profession (Willman, 2012). Problems with alcohol consumption are also prevalent among firefighters. In a survey utilizing 112 firefighters from a metropolitan area, 58% reported binge-drinking behaviors (Carey, Al-Zaiti, Dean, Sessanna, & Finnell, 2011). The incidence of binge-drinking among firefighters could be because it is perceived as an acceptable form of bonding with other firefighters and provides a temporary escape from the stress of the job (Carey et al., 2011).

In addition, divorce rates among firefighters are higher than the general population. There is a slightly higher divorce occurrence among male firefighters at 11.8% when compared to the

general population at 9.4% and a much higher divorce rate among female firefighters at 32.1% when compared to the general population at 10.1% (Haddock et al., 2016). These elevated divorce rates may reflect the impact on the personal lives of those who work in first responder professions. Another representation of work stress affecting this population is evidenced by the occurrence of suicidal thoughts and suicide attempts. A survey of 4,022 first responders in the United States reported that 37% of participants had contemplated suicide compared to 3.7% of the general population (Newland et al., 2015). In addition, 6.6% of survey responders had attempted suicide compared to 0.5% of the general population (Newland et al., 2015). Further, 87% of survey responders had experienced critical stress, which is stress resulting from one or more critical incidents that had an intense emotional impact (Newland et al., 2015). These instances of suicidal thoughts, suicide attempts, substance abuse, and other examples of poor mental health among first responders document the effects of working in a profession that requires cumulative exposure to trauma. This information also highlights the need for programs to be developed to help first responders and their families cope with the on-going stress.

While some evidence documents of the need for mental health services for this population, the existing research on first responders is primarily correlational, and further empirical research is necessary. A survey conducted by a mental health charity known as Mind, found that of the 3,500 first responders who participated, 87% had experienced poor mental health during their time as a first responder (Mental Health Today, 2015). The survey also found first responders to be less likely to take time off for mental health problems than the general population (Mental Health Today, 2015). Therefore, emergency first responders are at an elevated risk for developing mental health problems, and they are more likely to abstain from receiving mental health help or taking time off for mental health problems due to the associated

stigma. First responders fear losing their reputation of being brave and heroic as well as suffering from discrimination by their co-workers and supervisors (Rutkow, Gable, & Links, 2011). A diagnosis of PTSD for someone who holds a position as a police officer or firefighter could mean the end of their career, which causes them to be hesitant about reaching out for mental health help (Hoffman, 2017).

Another survey reported that 40% of first responders had access to mental health help that they did not utilize (Newland et al., 2015). First responders chose not to seek help for a variety of reasons including co-worker ridicule, co-workers believing they are unfit for the job, and fear of being fired (Newland et al., 2015). One respondent claimed to have asked for help and lost a 22-year career due to the request (Newland et al., 2015). A lack of psychological professionals who specialize in working with first responders creates additional difficulties for this population when they do seek help (Newland et al., 2015). One participant in the survey said, “I described the call that I was having trouble with only to have the psychologist look at me and say, ‘How do you guys do what you do?’ She was clueless and ill-equipped to help me” (Newland et al., 2015). This lack of personal understanding of the unique needs of professionals in this field represents another barrier for first responders experiencing mental health problems. Since emergency first responders are less likely to seek help when experiencing mental health issues, they should be supplied with tools that provide positive coping mechanisms and strengthen emotional resilience early on in their careers as well as throughout. This would allow emergency first responders to be more equipped to deal with the emotionally difficult situations their work requires and possibly prevent severe mental health problems from developing.

The stress experienced by emergency first responders often goes untreated because they are hesitant to ask for mental health help after a traumatic call due to the stigma associated with

it and because the programs currently in place have not been successful in addressing the unique needs of this population. During an informal consultation with an Emergency Medical Technician-Paramedic (EMT-P) who has worked in the Northern Indiana area, Sarah (pseudonym) stated, “There is a stigma about seeking mental health help or even talking about incidents with anyone other than your co-workers as a way to relieve stress.” I gathered from this statement that the hesitance to seek mental health help might be influenced by co-worker disapproval. In England and Wales, the Blue Light Programme was established in 2015 to help increase mental health support among first responders (Mind for Better Mental Health, 2017). The program has done a lot to increase the availability of mental health services among first responders as well as reducing the stigma through various campaigns (Mind for Better Mental Health, 2017). However, I could not find any empirical research that shows that this program has decreased the number of mental health problems experienced by first responders in this area. One point of weakness for this particular program is the focus on helping first responders after the event of mental health problems rather than looking to prevent their occurrence. Many programs available for first responders suffer from the same weakness; they focus on relieving symptoms after they have developed rather than preventing them. This is problematic because the accessibility of these programs varies from department to department and even when it is offered, it may not be utilized due to the associated stigma.

In the United States, After Action Review (AAR) is utilized after a crisis event and is a meeting for all of the professionals who were involved in the crisis response efforts (Adler-Tapia, 2013). These AAR meetings cover how the response efforts were effective and how procedures could be improved. However, as of a report in 2013, AAR meetings were lacking a psychological impact component (Adler-Tapia, 2013). Without an assessment of the

psychological impact of an event on the people who responded, there is no way to identify those who may need mental health support. This lack of a psychological component illustrates a focus on the success of organizational response rather than the mental health of the individuals dispatched.

One service developed to assist people who have experienced crisis events is Critical Incident Stress Debriefing (CISD) (Adler-Tapia, 2013). CISD utilizes small group support and encourages people to turn the events they experienced into a narrative (Tuckey & Scott, 2014). The purpose of CISD is to help participants with the psychological processing of the event and to prevent PTSD symptoms (Tuckey & Scott, 2014). However, a randomized controlled trial conducted with emergency services personnel, which investigated the efficacy of CISD, found that there were no significant differences between groups on scales of post-traumatic stress or psychological distress (Tuckey & Scott, 2014). The three conditions of the randomized controlled trial were screening with no intervention, stress management education, and CISD (Tuckey & Scott, 2014). The failure to document any significant differences between groups indicates that CISD may not be an effective method for reducing post-traumatic stress symptoms within first responders after critical incidents.

Critical Incident Stress Management (CISM) is another method for dealing with the psychological effects of crisis incidents that incorporates some ideas from CISD along with early intervention techniques and group support (Everly, Flannery, & Eyster, 2002). CISM attempts to help people deal with the emotional pains resulting from a crisis and prevent the worsening of psychological problems (Everly et al., 2002). CISM may be more effective than CISD regarding lowering the level of psychological distress experienced by first responders, however further empirical studies are needed (Everly et al., 2002). Some problems with CISM are that

participants may not be comfortable with group sessions and some feel that CISM is too late to help (Newland et al., 2015). In addition, many first responder departments do not encourage their teams to utilize services such as CISM (Newland et al., 2015). Therefore, even if CISM could be a useful method for reducing the stress experienced after a difficult call, many first responders will be hesitant to utilize it. Another issue with CISM is that it another intervention completed after a crisis has occurred without a preventative element.

Considering the nature of first responder professions, I wondered if there was anything included in their training that would emotionally prepare them for the chaos that they would be witnessing. Sarah, the EMT-P, informed me that the training she received was primarily technical and focused on the correct responses to various types of calls and scenarios. When asked her if her training included a mental health element she responded, “A very brief training was done while we were in paramedic school about ‘taking care of yourself,’ but I do not feel that it was in-depth enough for persons in the class to fully understand what the outcomes would entail and how they would be specifically affected.” Sarah was warned that some parts of the job would be “unpleasant,” but nothing came close to truly preparing her for the things that she has had to witness throughout her career.

In addition to the lack of emotional preparation that first responders such as Sarah receive, some departments may not have time to allow for the emotional processing of traumatic events after they occur. In Sarah’s department, “there is no protocol for coping with such issues. My department is so busy that you have to go on one call, then you get dispatched to go on something else.” From my consultation with Sarah, I gathered that first responders are not adequately prepared during training for the emotional aspect of their career, are not granted adequate time to recover after or between calls, and must deal with physical strains of long shifts

and sleep deprivation. Sarah is one of more than 1.2 million people serving in first responder professions in the United States who are in need of resources to protect their mental health (Schafer, Sutter, & Gibbons, 2015).

It might make sense for there to be preventative programs in place aimed at keeping mental health problems such as burnout, PTSD, depression, high-stress, and anxiety from developing in first responders. The purpose of this paper is to explore methods that could be integrated into early training programs in first responder departments to psychologically strengthen them before they encounter their first crisis call. Two areas of research that are showing promise in areas of enhancing psychological resilience and providing positive coping methods are mindfulness and art therapy.

### **Mindfulness**

The term mindfulness describes a state of elevated awareness of the present moment in a nonjudgmental and accepting manner (Khusid & Vythilingam, 2016). This means being aware of the physical body and its sensations, the mind and its thoughts, the current emotional state, the surrounding sounds, and the material environment of the present moment without judging these things as “good,” “bad,” or any other label. In other words, mindfulness is a heightened awareness of what is occurring within oneself and within the environment on a moment-to-moment basis. Mindfulness meditations help cultivate this awareness and make it more accessible. In the West, Mindfulness-Based Stress Reduction (MBSR) programs are utilized to cultivate mindfulness and include various breathing exercises, body scans, and meditation practices (Santorelli, 2014). Mindfulness may be particularly helpful for first responders because it would encourage careful attention to job duties while allowing an attitude of acceptance during

distressing moments. In urban firefighters, trait mindfulness has been associated with fewer PTSD symptoms, alcohol problems, and symptoms of depression (Smith et al., 2011).

Multiple paths can be taken to cultivate mindfulness. For example, hatha yoga is used to develop mindfulness through a focus on the breath in synchronicity with bodily movements (Luu & Hall, 2016). Yin/yang yoga, Ashtanga yoga, and Iyengar yoga are all forms of Hatha yoga (Luu & Hall, 2016). New research shows that art creation and other artistic outlets are alternate pathways to mindfulness cultivation through mind and body awareness and manipulation of materials (Patterson, 2015). People who may not be particularly fond of methods such as yoga for mindfulness cultivation may benefit from the utilization of art creation for the same purpose.

To gain an understanding of how mindfulness training could be used to help first responders develop emotional resilience and positive coping skills, it is necessary to understand where and how the concept originated. Mindfulness practice has its origins in Eastern countries, where there is a long history of meditation in multiple religious traditions and philosophical viewpoints. Buddhism is a commonly known religious/philosophical way of living that incorporates mindfulness meditation and yoga practice as tools for peace and enlightenment (Virtbauer, 2016). Jon Kabat-Zinn is known in Western countries for his integration of Buddhist teachings with scientific facts to create a program that teaches mindfulness to alleviate stress, anxiety, depression, and a surplus of other mental health disorders (Khusid & Vythilingam, 2016). His eight-week stress reduction program, MBSR, has been beneficial in multiple research studies (Gotink et al., 2015). Some form of MBSR may be helpful for first responders due to the high-stress nature of their career. Mindfulness-based cognitive therapy (MBCT) is another commonly used method, which uses mindfulness and self-compassion to alleviate recurrent depression (Metcalf & Dimidjian, 2014; Kuyken et al., 2010). MBCT works by helping people to

change dysfunctional thinking patterns that often lead to relapse in depressed patients (Kuyken et al., 2010). The reversal of dysfunctional thinking patterns could be particularly helpful for first responders. If their training included the development of mindfulness skills that encourage positive thinking patterns it could help to prevent the development of mental health problems such as depression.

In the September 2017 issue of FireRescue magazine, Karen Jackson, a psychologist of 20 years who specialized in working with firefighters, discussed the promise of mindfulness within this population regarding reducing instances of PTSD, compassion-fatigue, and burnout (Jackson, 2017). Jackson proposes that mindfulness may be helpful for those in first responder professions for many reasons. Mindfulness can give them the power to focus on that which they can control in any given situation and allow them to be mindful of the positive (as opposed to focusing solely on the negative) that comes with their career (Jackson, 2017). While her experiences are not of empirical value, they do lend support to the idea that mindfulness may be beneficial for this population.

Since the emergence of mindfulness in the United States, it has received a great deal of attention in psychological circles. This attention is evidenced by the 10,530 results that come from searching the term “mindfulness” in the EBSCOhost databases of PsycARTICLES and PsycINFO. In spite of the abundance of research published on mindfulness, there has been little attention to first responders, which is problematic considering the population has a high risk of developing mental health problems. A problem with the current research on mindfulness is that the terms meditation and mindfulness are sometimes used interchangeably which causes some confusion in the field of research. Meditation describes a technique that is used to train the mind through focused attention while a state of mindfulness may be the end goal (Hilton et al., 2017).

Mindfulness can describe a trait of a person or a state of living in which a person uses mindfulness to exercise awareness and a non-judgmental attitude through the course of daily activities (Jamieson & Tuckey, 2017). This difficulty in defining exactly what mindfulness is, and when the terminology use began has caused some issues in clarity within the existing research (Jamieson & Tuckey, 2017). Due to these problems, it is necessary that future research aim for complete clarity and pay particular attention to the overlooked population of first responders.

In spite of issues with clarity and lack of inclusion of first responders, mindfulness research shows great potential of the field for a multitude of benefits. MBSR is one way that mindfulness has been applied to modern psychology and it evolved from the development of the “Stress Reduction and Relaxation Program” by Jon Kabat-Zinn in the 1979 (Kabat-Zinn, 2011). MBSR has given a format to mindfulness practice that researchers can replicate and study in various populations. After an eight-week MBSR program, there was a significant cortical thickness increase, which was related to decreases in worry and state anxiety, within novice meditators (Santarnecchi et al., 2014). Cortical thickness refers to the layers of the cerebral cortex, which is the outermost tissue layering of the brain (Fischl & Dale, 2000). Increases in cortical thickness indicate increases in the number of neurons in the cerebral cortex, which has been positively associated with cognitive abilities in humans (Karama et al., 2009). Since increases in cortical thickness and reductions in state anxiety were documented within participants who were new to meditation techniques, it could benefit first responders with no previous experience with meditation or mindfulness. State anxiety is the anxiety humans experience in a moment filled with some threat, danger, or adverse experience (Leal, Goes, Ferreira da Silva, & Teixeira-Silva, 2017). First responders encounter adverse experiences on a

regular basis as part of their professional duty. It makes sense that if these findings extend to first responders, meditation techniques could be beneficial for reducing their state anxiety when encountered with stressful situations.

In addition, the brain of a long-term meditator has more grey matter than that of a non-meditator (Holzel et al., 2007). While the intricacies of grey matter are still being studied, it is known to be associated with positive brain functioning and connectivity. Grey matter decreases that naturally accompany aging in predominantly subcortical structures, lateral occipital, posterior, and anterior cingulate cortices in the brain may have some relation to the age-related cognitive decline and difficulty completing cognitively demanding tasks (Hafkemeijer et al., 2014). In other words, less grey matter is associated with more cognitive-related decline. If the act of meditation increases grey matter, it could be a promising method for improving overall brain function in a variety of ages and populations such as first responders. Increasing gray matter for first responders might allow a higher level of cognitive functioning and may improve their job performance.

When mindfulness training was incorporated into military training within a helicopter unit, the idea that mindfulness could increase cognitive performance was supported (Meland et al., 2015). A quasi-experimental study utilizing geographically formed groups of military trainees found that mindfulness training reduced the physiological stress experienced by participants while increasing their attentional control during periods of high-demand work (Meland et al., 2015). Physiological stress was measured through salivary cortisol while attentional control was measured through computer-based cognitive tests (Meland et al., 2015). Cortisol is a biomarker of stress and levels of cortisol can be measured in salivary samples making it commonly utilized in studies regarding stress response (Brand, Holsboer-Trachsler,

Naranjo, & Schmidt, 2012). The statistically significant effects provide support for the idea that mindfulness training results in reduced physiological stress responses (Meland et al., 2015). An increase in alertness and active coping responses was also documented, which could be beneficial in settings where attention to the task is of particular importance (Meland et al., 2015). If this finding extends to emergency first responders, it would mean that not only would they be better equipped to deal with the emotional effects of stressful calls but also could perform their job tasks in a more alert and attentive manner.

Further, a within-subjects experimental study documented significant reductions in awakening cortisol levels in novice meditators after participation in an eight-week MBSR program (Brand et al., 2012). The novice meditators in this study also experienced a significant increase in their scores for self-attribution of mindfulness and experienced fewer sleep difficulties post-MBSR (Brand et al., 2012). In addition, long-term meditators had significantly fewer sleep problems as well as significantly lower awakening cortisol levels than the novice meditators pre-intervention (Brand et al., 2012). In a correlational study, cortisol was present in higher concentrations among individuals with depression and anxiety and these cortisol levels were shown to decrease after recovery indicating a possible association between high levels of cortisol and mental health problems (Sachar, Hellman, Fukushima, & Gallagher, 1970). The presence of high levels of cortisol has also been associated with impairment of declarative memory in humans (Kirschbaum, Wolf, May, Wippich, & Hellhammer, 1996). Due to the adverse associations with elevated levels of cortisol, it makes sense that methods that could decrease cortisol levels such as MBSR and other mindfulness related interventions would be seen favorably for use within a variety of populations.

Mindfulness training such as MBSR could be particularly helpful for first responders due to the stressful nature of their occupation. Another potential benefit for first responders is that sleep could be improved following an MBSR program. One study utilizing 112 firefighters found that 59% suffered from sleep deprivation (Carey et al., 2011). In addition, 38% of a subsample of 22 firefighters experienced disrupted sleep patterns and extreme daytime sleepiness as measured by a motion logger actigraph worn on the non-dominant wrist for 72 hours (Carey et al., 2011). The study also found that firefighters who were suffering from sleep deprivation experienced more symptoms of depression (Carey et al., 2011). Therefore, the reduction of cortisol and reduced difficulties sleeping documented after MBSR could prove highly beneficial for first responders. It is necessary that future studies regarding cortisol levels and sleep quality include the population of first responders.

Various studies have documented psychological benefits of mindfulness-based programs within many populations. Some populations that have benefited from mindfulness interventions include cancer patients, those with severe anxiety and/or depression, people with PTSD, people who have experienced severe trauma, military personnel, veterans and other at-risk populations (Khusid & Vythilingam, 2016). One systematic review reported that in randomized controlled trials, MBCT reduced the risk of depressive relapse in patients who had suffered major depressive episodes (Khusid & Vythilingam, 2016). In addition, improved quality of life and decreased depressive symptoms were found in patients who were tapering off antidepressants (Khusid & Vythilingam, 2016). The review also reported significant decreases in PTSD symptoms within veterans who received MBSR compared to group-centered psychotherapy. Significant reduction in symptoms of anxiety and depression within participants who were involved in an online-based mindfulness intervention was also reported (Khusid & Vythilingam,

2016). Since first responders are at an increased risk of developing mental health problems like PTSD and depression, mindfulness-based techniques may be beneficial for them on a psychological level as well as a physiological level.

Mindfulness-based cognitive therapy has also been effective in reducing self-reported suicidal ideation and worry in a randomized controlled trial utilizing 130 people who had experienced at least one episode of major depressive disorder (MDD) (Forkmann et al., 2014). Since emergency first responders contemplate suicide at a rate ten times higher than the general population, mindfulness-based interventions that have been successful at reducing suicidal ideation could be particularly helpful for this population (Newland et al., 2015). Furthermore, mindfulness training, when used in military trainees preparing for deployment, resulted in enhanced recovery after stressful training compared to a control group (Johnson et al., 2014). This signifies that resilience mechanisms can be modified in healthy adults prior to exposure to stressful situations. This finding could be useful for first responders because they experience predictable stress as part of their professional duty. If first responders' resilience mechanisms were improved before their first call, it could prevent some mental health problems from developing.

Mindfulness interventions have also been used within professionals at an increased risk for burnout syndrome. Symptoms of burnout syndrome include severe exhaustion, increases in negative feelings such as pessimism or overall distrust, detachment from the job, and feeling ineffective or unaccomplished (Cicognani, Pietrantonio, Palestini, & Prati, 2009). One mindfulness intervention employed a shortened version of MBSR. The intervention resulted in statistically significant increases in relaxation and life satisfaction as well as significant decreases

in burnout symptoms within practicing nurses and nurse aides as compared to a waitlist control group (Mackenzie, Poulin, & Seidman-Carlson, 2006).

This intervention was quasi-experimental because an intervention group and a control group were utilized, but the participants were not randomly assigned. Due to the lack of randomization, the groups were slightly unequal at the start. The control group demonstrated less emotional exhaustion at the beginning of the study while all other characteristics were comparable (Mackenzie et al., 2006). When a workplace causes chronic emotional and interpersonal stress for an individual, burnout syndrome can develop (Smith J. L., 2014). Long hours, sleep deprivation, and cumulative exposure to trauma experienced by first responders make them highly susceptible to burnout syndrome. Since burnout symptoms were reduced within practicing nurses and nurse aids who also endure high-stress work environments, it would make sense to study MBSR within first responders and anticipate similar benefits.

Little research documents the benefits of mindfulness practice within the population of emergency first responders. However, research within war veterans and other at-risk populations who also experience high levels of stress and trauma have shown success at reducing symptoms of anxiety, depression, PTSD and stress (Banks, Newman, & Saleem, 2015). If mindfulness techniques can alter the brain in beneficial ways and increase emotional regulation, it makes sense that these methods could help emergency first responders cope with the cumulative trauma their work requires so they can live healthier, happier lives and reduce occurrences of adverse psychological effects.

It is important to note that within emergency first responders, not all coping methods would be equally beneficial (Cicognani et al., 2009). For example, if a first responder utilizes a problem-solving method of coping, they may be overcome with stress when faced with situations

that they cannot solve because the damage has already been done and their go-to coping method is ineffective (Cicognani et al., 2009). These types of situations may include those where life has been lost, or irreversible damage has taken place (Cicognani et al., 2009). Acceptance based coping strategies or coping strategies that utilize cognitive restructuring may be more useful for first responders when faced with these scenarios (Cicognani et al., 2009). Mindfulness practice places great importance on accepting, processing and letting go of adverse experiences, which may prove particularly useful for people in first responder professions (Rosenzweig, 2013).

The empirical research on mindfulness is relatively strong and growing rapidly. However, the populations explored by this research need to be broadened to determine if the positive effects can be generalized to other populations, especially emergency first responders. One considerable problem with mindfulness research to date is that the definition of what mindfulness is tends to vary from one research study to another depending on what aspects of mindfulness are measured (Jamieson & Tuckey, 2017). Mindfulness can be defined as a trait, a state, practice, intervention, or combination of any of the former (Jamieson & Tuckey, 2017). This variety of operational definitions about what mindfulness is reflects an issue with clarity that could harm the validity and strength of the broad field of research (Jamieson & Tuckey, 2017). Therefore, it is necessary for people working in this field to precisely define mindfulness and its components, be explicit in describing which areas are being researched, and ensure that the measurements used reflect what they intend to measure (Jamieson & Tuckey, 2017).

Another critique of using mindfulness-based techniques for mental health benefits outlines potential cultural misinterpretation that can occur when one aspect is isolated from a religious practice and its history (Hickey, 2010). Mindfulness meditation is only one piece of the puzzle regarding Eastern religious and philosophical viewpoints, yet it seems to be the sole

aspect focused on in Western countries (Hickey, 2010). This removal of large chunks of Buddhist history along with the assumption that this one part, mindfulness meditation, can be universally applied without knowledge of the broader framework could be problematic (Hickey, 2010). One concern is that when mindfulness meditation is divorced from its moral context, with roots in the Eastern belief in karma, much of the depth and benefit may be removed as well (Hickey, 2010).

Therefore, it is necessary that the field of research on mindfulness clarify operational definitions and increase cultural education and knowledge of origins to strengthen the research. While the research on mindfulness seems promising thus far, it is of extreme importance that the flaws in the existing body of literature are not overlooked. More research should include cultural aspects of mindfulness and seek to compare benefits of meditation alone with benefits of adopting the entire framework of beliefs. Once operational definitions have been clarified, more research into populations within different cultures, socioeconomic backgrounds, and occupations is also necessary. Future studies on mindfulness must also include first responders since they have been largely left out of empirical research on mindfulness thus far. Mindfulness practices should be studied as a method of treatment for mental health problems and as a method of prevention of mental health problems within first responders.

Multiple pathways allow for mindfulness cultivation ranging from traditional mindfulness meditations to breathing exercises to yoga practices. Another path to cultivating mindfulness is through the mindful creation of art. Complete engagement with whatever is currently taking place is seen as successful employment of mindfulness. Art creation gives the perfect opportunity to engage fully and creatively with the present moment (Dhiman, 2012). Art-making activities allow for the utilization of breathing exercises while participating in an

attentive way with sensory activities (Patterson, 2015). Through art making activities, a person can come into the present moment with focused awareness of the materials at hand and present emotions can be identified and processed through the act of art creation (Patterson, 2015). Further, engaging in art making allows for people to overcome self-doubt, engage in problem-solving, gain control over their physical world, become mindful of and learn from mistakes, and become aware of the potential limitlessness of creation. (Dhiman, 2012). Art creation allows for an environment that is conducive to learning mindfulness, acceptance, and self-compassion while overcoming mental barriers (Dhiman, 2012). Learning mindfulness through art activities may be an accessible method of coping for those in first responder professions. Art creation as a therapeutic method has been studied within a variety of populations through the lens of art therapy.

### **Art Therapy**

Art therapy utilizes art making in conjunction with applied psychology and the development of a psychotherapeutic relationship between client and therapist within group or individual sessions to enrich the lives of the participants and gain insights through the creative process (American Art Therapy Association, 2017). The creative process refers to the sequence of mental activities that leads to the production of something novel (Lubart, 2000-2001). The creative process has several stages beginning with the identification of a task or problem, a series of testing possible solutions or ways of executing the task, and the finished outcome (Lubart, 2000-2001). The creative process requires mindful attention, problem-solving, and mental flexibility (Lubart, 2000-2001). In the case of art therapy, the task is the creation of art, which is usually meant to reflect some aspect of the inner experience of the person. A person has to mentally test possible ways to execute their idea or internal narrative into a physical form. When

creating a work of art, the artist is in control of when the work is finished, and this is usually determined when a person feels as though they have successfully communicated their thoughts, ideas, or emotions. This process involves a great deal of trial and error, requires concentrated attention, and fosters a certain amount of self-compassion because regardless of the thoughtful planning beforehand, the final work of art reflects the process of errors that occurred.

One has to learn acceptance and to make the best of what has occurred rather than becoming frustrated at failures to depict things precisely as they may have intended. Some similarities between mindfulness and art therapy are that they both require non-judgment and acceptance. If a person wishes to reap the benefits of art therapy, they have to learn to be non-judgmental of their work and accept the art for what it is (Kalmanowitz, 2016). This requires embracing perceived flaws and re-structuring mental ideas from negative ones to positive ones (Kalmanowitz, 2016). The art is a bridge between the patient and the therapist for communication, and therefore is meaningful no matter what (Van Lith, 2015). The process of learning and communicating through art creation is considered much more important than the aesthetic value of the outcome. Similarly, in mindfulness practice, a person learns to be non-judgmental and accepting of their thoughts and emotions while they cultivate an internal awareness that allows them to change their thinking mechanisms from negative to positive (Rosenzweig, 2013). This shift from negative thought processes to positive thought processes could be especially beneficial for first responders since they encounter negative events on a regular basis.

To determine the potential of art therapy for helping emergency first responders, it is necessary to cover the origins as well as the current state of research in this field. The National Institutes of Health (NIH) trace the roots of art therapy back to 1958 where researching pursuits

in the area began with the work of Hanna Kwiatkowska (Robb, 2012). While official art therapy research at NIH began in 1958, it seems to have fallen out of popularity from the 1970's to the 1990's and then reemerged as a valid area of research in the 1990's and research continues to date. Another source dates the emergence of art therapy back to as early as 1947 and states that it emerged through artists work in their studios and the emotional re-education that resulted from the art creating process (Wix, 2010). Concerning art being used to cope with psychological stresses, one could say it has existed since creation in the form of art has existed, perhaps since primitive humans created cave paintings or sculptures.

Although it cannot be known for sure, art creation does not seem to be born of function the way that tools for eating or hunting were created; rather it seems to have come about as some part of human evolution that extends past functionality to aesthetic and emotional value (Morriss-Kay, 2010). As an artist, I would say that I have used art as a tool for coping with my past traumas and for working through my emotional disturbances to make peace with myself. If a person has a conversation with any artist, they are likely to hear similar explanations when the artist is asked why they create art. One art professor of mine referred to art creation as a "soul endeavor." While these personal accounts of using art to cope are uplifting, they lack the empirical evidence required to make claims of efficacy, which is why research that is more empirical needs to be completed in this area. A growing body of research documents the biological and psychological changes that take place after art creation and art therapy. In my opinion, such research shows promise that art therapy could benefit first responders.

Like mindfulness, art creation has shown promise in reducing cortisol levels. After a 45-minute art-making session facilitated by an art therapist, participants' cortisol levels were reduced (Brand, Holsboer-Trachsler, Naranjo, & Schmidt, 2012). This study, however, was

flawed in its execution as many research studies in this area are. It lacked a control group, had a small sample size, was composed primarily of women (82%), used a healthy non-clinical population, and did not control for varying levels of interaction with the researcher (Brand et al., 2012). More controlled research on cortisol reductions due to art therapy would help confirm the validity of these results. In 2014, researchers interested in brain changes due to art creation studied two groups: an art production group and an art evaluation group (Bolwerk, Mack-Andrick, Lang, Dorfler, & Maihofner, 2014). The art production group experienced more spatial improvement in functional connectivity of the posterior cingulate cortex in the brain than the art evaluation group as measured by functional magnetic resonance imaging (fMRI) (Bolwerk et al., 2014).

The researchers also found that improvements in the posterior cingulate cortex were related to enhancements in psychological resilience (Bolwerk et al., 2014). Psychological resilience is the ability to recover quickly in the face of adverse events that challenge a person emotionally (Harker, Pidgeon, Klaassen, & King, 2016). This was the first study of its kind to physiologically link art creation to brain changes that signify statistically significant improvement in psychological resilience, and it utilized random assignment and an active control group, which makes it one of the stronger research studies within the field (Bolwerk et al., 2014). An additional strength of this study is that it utilized equal numbers of women and men in the research, which documented the brain improvements associated with resilience were consistent across genders (Bolwerk et al., 2014). This is of great importance since much of the information in the field utilizes more substantial numbers of women than men. It also could signify that first responders, who are primarily male, could benefit from the act of art creation by potentially increasing their psychological resilience.

In 2014, a quantitative electroencephalogram (qEEG) was used to measure brain activity within and between two groups (artists and non-artists) before and after a 20-minute drawing activity using oil pastels (Belkofer, Van Hecke, & Konopka, 2014). Alpha band activity in the brain increased in both groups after the drawing activity (Belkofer et al., 2014). Alpha band presence in the brain is linked to relaxation and low physiological arousal (Belkofer et al., 2014). This alpha band presence has also been documented in research regarding meditation and exercise activities and is believed to be linked to self-regulation (Belkofer et al., 2014). The drawing study using qEEG concluded that art therapy might be a useful tool for increasing a person's capacity for self-regulation by allowing easier access to the inner reality that person experiences (Belkofer et al., 2014).

However, this study had several limitations. One limitation is that the activity was done in isolation and did not require the processing of emotional events that an art therapy session would. Due to this difference, we cannot say that art therapy sessions utilize the same areas of the brain. Another limitation was that only pre- and post-drawing activity measures were taken which leaves the entirety of the mental process undergone during the actual creation untouched by evidence (Belkofer et al., 2014). In addition, there were only 10 participants, seven of which were women (Belkofer et al., 2014). This unequal participation of genders in the studies of art therapy is common and needs to be explored further. While new technology is available that can help us understand the mental processes undergone in art creation, the evidence that we have to support the use of art therapy leaves much to be desired. While the findings of this study need to be confirmed through more research, the preliminary results show that the simple act of art creation could elicit a relaxation response and increase self-regulation. Relaxation and self-regulation would both be beneficial for first responders. Relaxation techniques are necessary for

first responders to wind down from their stressful days and engage with their friends and families in meaningful ways while self-regulation would help to process stressful events and move on emotionally.

Further, participants with a variety of mental health disorders have used the process of art creation as a recovery tool to encourage change and as an ongoing method of coping (Van Lith, 2015). This was determined by a qualitative study with a small sample size of 12 participants, which utilized open-ended interviews, as well as completion of a recovery assessment (Van Lith, 2015). The results were promising, and the small sample size allowed for an in-depth exploration of the participants' experiences (Van Lith, 2015). However, like much research in the field of art therapy, we cannot prove causation within the boundaries of this study because it was not an empirical randomly controlled experiment. Nevertheless, it did have strength in that it utilized a higher percentage of men (42%) than many studies using art therapy and it looked into the clients' perspectives on how they used art to cope and transform (Van Lith, 2015). Both male and female participants in this study identified using art as a motivational force when they were unwell and as a vehicle to enter a psychologically safe place (Van Lith, 2015).

One participant said art making, "takes me away to a better place, where I don't have to worry about the everyday problems and makes me feel better about myself" (Van Lith, 2015). Another participant in the study identified the strength of art as a means of communication with the therapist, which helped with exposure of internal experiences (Van Lith, 2015). In addition, participants in this study used art as a tool to resolve their inner conflicts and make peace with themselves (Lith, 2015). While this was a small study and was not of empirical standards, it offers unique and detailed insight from the perspective of the client in art therapy treatment, which is essential when trying to understand any phenomenon. Regarding first responders and

the challenges unique to their profession, it could be useful for them to be provided with tools for coping such as art creation to reduce the instance of mental health problems.

Another study looked into the potential of art therapy within the area of healing cumulative trauma, which refers to the buildup of multiple traumatic events in one's life (Naff, 2014). The qualitative research addressed the subject from the perspective of the art therapist by utilizing three practicing art therapists, who have had success in treating cumulative trauma in their patients, in a semi-structured interview format (Naff, 2014). The clinicians interviewed emphasized instilling ideas of self-acceptance within the client and introducing relaxation techniques before any art activities were used to address the cumulative trauma (Naff, 2014). This shows the importance of initial mental preparation and development of a safe, non-judgmental space for the client to explore their inner conflicts through art. After those steps were taken, the clients could then use art to explore internal processes, gain control of experiences through the physical manipulation of materials, develop skills for emotional regulation, and put their trauma into a narrative form from which it could be processed (Naff, 2014). Increased emotional awareness and regulation would benefit emergency first responders by allowing them to do their jobs more efficiently and keep them from becoming emotionally overwhelmed. Art creation could enable first responders to take control of their emotional experiences through manipulating the art materials while allowing them to process inner conflicts that they may not have had time to address while on duty.

Trauma, like that experienced by first responders, is sometimes stored in areas other than the prefrontal cortex, which is where verbal processing takes place (Naff, 2014). If a traumatic memory is stored in the limbic system along with other visceral response memories, art creation could be a bridge between these areas of the brain and make the processing of the memory more

accessible (Naff, 2014). This research was limited due to the use of only three participants and the sole perspective of the therapists without any confirmation of results from the patients. However, it shows potential in the field of art therapy for helping those with mental health problems associated cumulative trauma learn to cope with their experiences. It is necessary for this field to increase the number of empirical studies and to explore diverse populations to give credit to the claims documented through qualitative interviews, anecdotal evidence, and case studies. If further research confirms existing findings, art therapy could be beneficial for the population of emergency first responders since they are exposed to cumulative trauma through their professions.

Art therapy has shown promise concerning PTSD symptom relief within several populations. A sample of eight male American combat veterans clinically diagnosed with PTSD participated in a qualitative study that looked into the possibility of using art-based therapy for PTSD, grief, and moral injury (Artra, 2014). The participants were recruited on a referral basis and attended a five-day retreat called, “The Warrior’s Journey” which focused on making meaning of their experiences through narrative art creation (Artra, 2014). The retreat also incorporated body-based mindfulness techniques of which the effects were not analyzed (Artra, 2014). The integration of these methods may signify the potential of mindfulness and art to complement each other. The PTSD Checklist-Military Version (PCL-M) was used for pre- and post-retreat measures of PTSD symptoms (Artra, 2014). Those scores were utilized along with qualitative data received from participants during interviews and a presentation of their work with their explanation of their journey during the retreat (Artra, 2014). For all of the participants, PCL-M scores decreased from pre- to post-retreat from 21% to 70% (Artra, 2014). Seven of the participants’ scores were statistically significant while the lowest score decrease was still

determined reliable (Artra, 2014). The participants gave heartfelt accounts of their art-making experience that included finding inner peace, connecting with themselves, transforming into a new person, and confronting parts of themselves that were emotionally disturbed (Artra, 2014).

The researcher determined that through the creative process and its result, art-making allowed participants to make meaning of their narratives, process neglected emotions and begin to construct new ideas about themselves (Artra, 2014). The use of all males shows that there is potential in the area of art therapy to benefit men as well as women (Artra, 2014). This study did not utilize a control group of any kind, and there were other uncontrolled factors in the retreat including mindfulness exercises and group social engagement that could have contributed to the improvements in PTSD symptoms so causation cannot be confirmed. However, this study illustrates that there is potential in this field for alleviating PTSD symptoms within a reasonably short amount of time (Artra, 2014). Since art therapy has shown potential for relieving PTSD symptoms within male combat veterans, this could translate to assistance for first responders who have acquired PTSD from their career exposure to trauma. Making meaning and processing neglected emotions could be essential tools for first responders to protect their mental health.

Some people in first responder professions may already utilize artistic creation for stress reduction. Sarah, the EMT-P, elaborated on her stress reduction techniques saying, "I have dealt with my personal job-related stress by crying, talking it out, writing, and/or performing some type of artistic talent... you cannot keep things inside." Perhaps other people in first responder professions could benefit from the introduction of artistic methods for coping and stress reduction as alternatives to potentially maladaptive means of coping like alcohol abuse or emotional shutdown. Since art therapy has shown some promise regarding stress reduction and

increasing resilience within other populations, it is necessary that future studies in this field be directed at first responders.

There are indications that art therapy may be a useful tool for trauma recovery while mindfulness may be a particularly helpful tool to have before the trauma takes place. If a program utilizing both is administered at the beginning of a first responder's career and ongoing weekly or monthly drop-in sessions are also available, it could help first responders with both mental preparation in advance and emotional assistance after difficult situations. Art creation as a preventative factor has not been explicitly studied, but there have been correlations made between art creation and increases in the area of the brain that corresponds to emotional resilience (Bolwerk et al., 2014). Studies that address art creation as a preventative factor are necessary.

The entire area of research concerning art therapy is in great need of more empirical studies that employ randomization and use of control groups. Thus far, most of the studies are promising but lacking in sound evidence. Many existing studies are based on self-reporting evaluations and anecdotal evidence so in spite of the potential in this field; it will not seem credible until research that is more dependable is done. There is also a need for studies explicitly looking into gender relationships with this type of therapy. Many of the existing studies utilize primarily women, which is a generalizability issue. The field has potentially overlooked the possibility that men are either less interested in participation in art therapy due to perceptions of femininity or have been under-recruited for such studies. Either way, it is necessary to gain more information about the efficacy of art therapy within men to be obtained. Further, within the population of emergency first responders, I encountered great difficulty finding any research on art therapy that explored this population. Even though the psychological needs of first responders

have been documented, it seems that this population has been almost entirely overlooked within art therapy research. Because of this, I have used other populations such as war veterans with PTSD, those who have experienced cumulative trauma, and those with other clinical diagnoses to make hypotheses about the possible benefits of these methods for emergency first responders.

Research that is more empirical is needed to support or disprove my hypotheses. It is also possible that there are gender barriers within the field of art therapy that have translated into over-looking first responders, which is a male-dominated profession. According to a recent report, about 75% of EMT's and paramedics are men, 87% of police officers are men, and 95% of firefighters are men within the United States (Schafer, Sutter, & Gibbons, 2015). While the number of women in these professions has increased, for example, within firefighting professions, employment of women has risen from 1% to 5% in the past 34 years, as it stands currently; there is a shortage of females in first responder professions (National Fire Protection Association, 2017). The number of studies in the area of art therapy that utilize men is insufficient. However, those that do use male participants document the apparent usefulness of art therapy across genders which could make it a valuable resource for both male and female first responders.

### **Integration of Mindfulness and Art Therapy**

Art creation can be viewed as one of many possible pathways to the acquisition of mindfulness traits. Mindfulness-based techniques have been steadily making their way into art therapy with or without the intention of the therapists. In the research on art therapists who had been successful in treating cumulative trauma, it was explicitly stated that instruction of relaxation techniques and ideas of self-acceptance need to be instilled within clients before the art-making process began for it to be most effective (Naff, 2014). Since relaxation techniques,

thought and emotion awareness and acceptance are all core components of mindfulness it seems the two fields may be useful compliments (Rosenzweig, 2013).

One of the participants of a longitudinal qualitative study on art-making as a tool for change and coping stated that the experience of art making was, “a meditative process, which works like a mindfulness or a dialectical behavior therapy exercise” (Van Lith, 2015). Another participant of the study commented that she would let the artwork flow without judging the results, which illustrates mindfulness principles of non-judgment and acceptance (Van Lith, 2015). Concepts of moment-to-moment surrender and emotional regulation gained through the creative process were present in the discussion of how art therapy helped the participants recover, which are also components of mindfulness (Van Lith, 2015).

In addition, the study regarding alpha band presence in the brain after drawing reported that it signifies lowered arousal and a state of relaxation (Belkofer et al., 2014). The authors went on to mention that similar alpha band presence had been documented during meditation in previous studies (Belkofer et al., 2014). This could signify that similar brain regions are utilized in art creation and meditation and may work well together in a therapeutic setting. While these links have not been explicitly studied to my knowledge, we have the technology available to make these comparisons possible if the time and research is dedicated to better understanding the psychological and biological links between art creation and mindfulness.

Recently, the integration of mindfulness and art therapy has been studied in a handful of populations such as cancer patients, vulnerable children, and survivors of political violence (Monti, et al., 2006; Kalmanowitz & Ho, 2017; Coholic & Eys, 2016). In 2006, group of researchers utilized a new psychosocial group intervention called mindfulness-based art therapy (MBAT) which systematically employs equal parts mindfulness skills development based on

MBSR curriculum and mindful art creation activities (Monti et al., 2006). The research done in by Monti et al. led to a pilot MBAT program with cancer patients from 2010 to 2014, which has received positive reports from participants (Peterson, 2015). Other integrations have included an arts-based mindfulness intervention for vulnerable children, an art therapy and mindfulness qualitative study for survivors of political violence, and a mindfulness art therapy short version intervention for advanced cancer patients (Coholic & Eys, 2016; Kalmanowitz & Ho, 2017; Ando, Kira, Hayashida, & Ito, 2016). Although first responders have not been studied using mindfulness and art therapy integration, there is support for the idea that this type of program could be beneficial for the population due to promising results within other high-stress populations.

In 2005, the first randomized, controlled of MBAT utilizing equal parts mindfulness training and mindful art creation was completed using the population of female cancer patients (Monti et al., 2006). The eight-week MBAT intervention was developed through a combination of mindfulness activities based on Kabat-Zinn's MBSR program and mindful art therapy activities (Monti et al., 2006). The purpose of the intervention was to improve the mental health of the participants through the provision of verbal and non-verbal activities and tools to expand coping strategies (Monti et al., 2006). The Symptom Checklist-90-Revised (SCL-90-R) was used to measure several subscales of mental health (Monti et al., 2006). The MBAT intervention group experienced statistically significant improvements in all of the subscales measured by the SCL-90-R when compared to the waitlist control group including anxiety, depression and interpersonal sensitivity (Monti et al., 2006). The benefits are believed to be associated with the ability of MBAT to enhance adaptive coping skills, increase awareness and facilitate processing of emotional responses, and put participants in control of their emotional experiences (Monti et

al., 2006). The two most significant weaknesses of this particular study are that they did not utilize an active control group so we cannot compare efficacy to another intervention type and only women were studied (Monti et al., 2006). In spite of the weaknesses, it is one of the only randomized controlled experiments in the current literature to look into the benefits of the systematic integration of mindful art creation and mindfulness skill building.

Since first responders have not been studied using mindfulness and art therapy integration techniques, it cannot be said without a doubt that they will be beneficial to this unique population. However, the results with other high-stress populations show that there could be potential in this area especially regarding instilling positive methods of coping and increasing psychological resilience. The promising results of MBAT within cancer patients could extend to first responders because the two populations have some major similarities. Cancer patients and first responders are both high-stress populations that have to deal with their stressors on a regular basis. Both populations could also benefit from the acquisition of positive coping skills, increased awareness of emotional responses, and enhanced ability to process emotional events. In addition, both populations could benefit from a heightened sense of control over their life experiences since factors that are out of their control are engrained into their lives. Mindfulness-based art therapy is believed to help with all of these factors and has shown effectiveness in cancer patients (Monti et al., 2006). Due to the promise in this area and the similarities between the psychological needs of first responders and cancer patients, future MBAT interventions must focus on first responders.

Another study expanded on the findings of Monti et al. within Japanese patients with advanced stages of cancer, using a modified mindfulness-based art therapy short version (Ando, Kira, Hayashida, & Ito, 2016). The study found that the intervention decreased participants'

scores for Tension-Anxiety, Depression-Dejection, and Confusion-Bewilderment as well as showing an increase in vigor after only two sessions using the Japanese short version of the Profile of Mood States (POMS) (Ando et al., 2016). Unfortunately, there was no use of a control group in this study and only female cancer patients were used (Ando et al., 2016). It did expand on the knowledge base of MBAT by showing that effectiveness could be found even after two brief one-hour sessions and that MBAT could be an effective method of improving symptoms of anxiety, depression, and confusion even within those with advanced levels of cancer (Ando, Kira, Hayashida, & Ito, 2016). Monti et al.'s original research on MBAT only looked into cancer patients who were within four months and two years of their initial diagnosis (Monti et al., 2006). This could mean that within first responders, even those who have been in the profession for a long time utilizing maladaptive coping mechanisms could benefit from the introduction of mindfulness-based art activities. MBAT should be studied as a preventative technique within new first responders and as a form of mental health treatment for those who are already well into their career.

In a study that utilized healthy Japanese college students, the effectiveness of short version MBAT was compared to art therapy alone (Ando & Ito, 2014). The two groups were not randomly assigned; two existing classes were utilized for the two intervention groups. So, there was some variation in the groups before the intervention took place that may have confounded the results (Ando & Ito, 2014). However, the pre- and post-intervention measures of the two groups assessed by the POMS that indicated that MBAT could be more effective than art therapy alone (Ando & Ito, 2014). The MBAT group experienced significant improvements in tension-anxiety, depression-dejection, vigor-activity, and fatigue-inertia while the art therapy alone group only experienced significant improvements in the areas of tension-anxiety and fatigue-

inertia (Ando & Ito, 2014). This study, while flawed, gives some support to the idea that mindfulness-based art therapy may provide more benefits to participants than art therapy alone.

Another integration study looked into the effectiveness of a 12-week arts-based mindfulness program called the Holistic Arts-Based Program (HAP) within vulnerable children who were referred to the study through mental health and child welfare agencies (Coholic & Eys, 2016). The study was quasi-experimental because they used three groups including the HAP group, an art and crafts group, and a waitlist control group but there was no randomization in the group assignment (Coholic & Eys, 2016). Pre- and post-intervention scores were measured using the Piers-Harris Children's Self-Concept Scale (Coholic & Eys, 2016). There was also a qualitative element, which included interviews with the children and their parents about perceived outcomes of the program (Coholic & Eys, 2016). The researchers encountered several problems collecting scores, and therefore many participants' data was not included. In addition, the interventions spanned over three years with different people facilitating various groups, which may have left the study vulnerable to confounding factors (Coholic & Eys, 2016).

Given the issues with the study, it still was able to provide interesting insight. Self-concept, which measured how children felt about their behavior, appearance, and abilities statistically increased from pre- to post- intervention. The researchers also found through qualitative semi-structured interviews that there were several perceived benefits from the program such as improved emotional regulation, improved mood, development of more effective coping skills, and enhanced feelings of empathy towards others (Coholic & Eys, 2016). The study gives support to the use of programs that integrate mindfulness and art activities to improve self-concept and possibly improve emotional regulation and positive coping strategies within a population that is at risk for developing mental health problems. Vulnerable children

and first responders are both populations considered at risk of developing mental health problems. Since arts-based mindfulness training has shown some promise in increasing self-concept and providing coping tools to vulnerable children, this could extend to the population of first responders (Coholic & Eys, 2016).

Art therapy used in combination with mindfulness has helped survivors of political violence with emotional regulation, increased awareness, and clarity of thoughts (Kalmanowitz & Ho, 2017). This research aimed to assess the efficacy of integrating mindfulness and art therapy for enhancing resilience within asylum seekers in Hong Kong who were survivors of political violence and reported symptoms associated with trauma (Kalmanowitz & Ho, 2017). There were twelve participants in the study, nine females and three males, from seven different countries, who had all suffered multiple traumatic events (Kalmanowitz & Ho, 2017). The data used for analysis included the art produced, individual interviews, and writing activities completed by the participants (Kalmanowitz & Ho, 2017).

The researchers concluded that the art and mindfulness activities helped participants work through traumatic memories, imagine new identities, regulate emotions, communicate their stories, and increase their resilience and self-worth (Kalmanowitz & Ho, 2017). One participant illustrated an increasing sense of self-worth by saying, “We have the ability to paint and be creative, to feel better about ourselves.... The capability to do something with our lives” (Kalmanowitz & Ho, 2017). The researchers reported that the participants utilized mindfulness outside of the intervention to deal with stressors in their daily lives and some turned to drawing to provide relief from day-to-day problems (Kalmanowitz & Ho, 2017). The qualitative assessment gave a more in-depth look into the way people who have accumulated multiple traumas could use art creation and mindfulness to cope with their traumatic memories and

develop new skills to deal with daily problems (Kalmanowitz & Ho, 2017). Survivors of political violence and first responders are both populations who have experienced or will experience multiple traumatic events and who could benefit from the acquisition of positive coping skills (Kalmanowitz & Ho, 2017). Due to the promising results within survivors of political violence, it is necessary that future research is dedicated to the population of first responders.

The intentional integration of mindfulness and art creation for benefits such as developing coping skills, reducing depression and anxiety, and increasing self-concept have only begun to be studied recently. Due to this, there is a great deal of research that needs to be completed to prove efficacy in this field. The existing studies have flaws such as not including equal numbers of men and women, having small numbers of participants, lack of quantitative data, few populations studied, and presence of confounding factors left uncontrolled. Due to these flaws and the small amount of literature available on the integration of mindfulness and art creation, research that is more empirical and includes a variety of populations is necessary. The promising results from the existing studies warrant a more thorough investigation in future research.

### **Future Directions**

Future research on mindfulness and art therapy must focus on precise definitions, equal inclusion of men and women, equal inclusion of diverse ethnicities, increased prevalence of randomized controlled trials with reliable measures, and include the population of emergency first responders. Special efforts need to be made to study the population of first responders because they represent a population which has been widely overlooked in current research and who could benefit significantly from the provision of psychological training to increase coping skills and resilience. Mindfulness-based art therapy needs to be studied against active controls to

determine if it is more efficient than other possible interventions such as MBSR. In addition, art creation, mindfulness skills development, and mindfulness and art integration programs need to be studied as potential preventative measures to protect against mental health problems rather than only being considered solutions for existing mental health problems. Advanced brain scan technologies should be utilized to broaden the field's knowledge of how methods of art therapy and mindfulness training influence the brain alone and when used together.

I propose a randomized controlled trial that will look into these fields as methods for increasing psychological resilience and promoting positive coping skills within first responders. Such a study could utilize four groups: an art therapy group, a mindfulness-based art therapy group, a mindfulness-based stress reduction group, and a control group that would receive training as usual. The groups should be measured using multiple scales before the intervention, after the intervention, and at follow-up intervals throughout their careers as first responders. The research should include quantitative measures of mental health, mindfulness, resilience, and coping skills in addition to qualitative data obtained from one-on-one interviews before and after the intervention as well as follow up intervals during their careers. A study such as the one proposed would allow art therapy, mindfulness-based art therapy, and mindfulness-based stress reduction to be studied as preventative measures to enhance coping skills within first responders while providing information as to which area holds the most potential for benefitting first responders.

I believe that the time and expense required for such a study would be entirely worth an in-depth analysis of this unique population and provide a means for preventing psychological harm to a population who has chosen to dedicate their lives to saving the lives of others. An injustice has been done to this population through society's complete lack of involvement in

protecting their mental health in spite of the knowledge that the career holds psychological risk factors. This injustice could be corrected if future research is dedicated to this population and programs based on the results are implemented across first responder departments.

The results of such a study could be used to develop a program to mentally and emotionally prepare first responders for their challenging careers. Such a program would focus on mindfulness training and mindful art creation to increase psychological resilience and teach methods for coping with stressful events. In addition, these departments could utilize an on-staff psychological professional to help those who are already embedded in their careers and may need help recovering from the trauma that they have experienced. More time, money, and research effort must be dedicated to this population to ensure that they can serve and protect our society without suffering irreparable damage to their mental health.

First responders have a unique set of mental health challenges that they must face as part of their profession. Many first responders experience high levels of stress, and they contemplate and attempt suicide at higher rates than the general population (Newland et al., 2015). There are some services available to first responders for coping with their traumatic experiences, but the departmental support of these services is not adequate (Newland et al., 2015). The stigma associated with seeking mental health help, fear of job loss, and fear of negative co-worker opinions on seeking mental health help are all reasons first responders refrain from using mental health services (Newland et al., 2015). Even when first responders do use services such as counseling or CISM, they encounter psychologists who do not specialize in working with their population and have trouble helping them sufficiently (Newland et al., 2015). Because of the lack of formal assistance, many first responders turn to maladaptive coping methods such as alcohol abuse to deal with the stressors of their profession (Carey et al., 2011; Willman, 2012).

Due to these issues, it is necessary that techniques such as mindfulness and art therapy be explored within first responders. Mindfulness and art therapy have both been effective within high-stress populations and show preliminary evidence for strengthening psychological resilience and providing positive coping methods (Bolwerk et al., 2014; Johnson et al., 2014; Kalmanowitz & Ho, 2017; Monti et al., 2006; Van Lith, 2015). More research that includes emergency first responders is necessary so that the development of a preventative program for this population can begin. It is time for psychological professionals to work together to solve the mental health problems that first responders face so that they can lead happier, healthier lives. First responders risk their lives and their mental health to provide safety and care for others, and they deserve to be equipped with the coping skills necessary to protect their mental health.

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