Mitigation of Secondary Traumatic Stress in Disaster Responders with Mind-Body Practices

Introduction

The devastation following major natural disasters has been experienced throughout human history, and when three massive hurricanes and a raging forest fire all struck the United States in the summer of 2017 the topic became even more poignant. The psychological and emotional impact upon those experiencing natural disasters has been studied extensively in a review article by Neria, Nandi, and Gaela (2008). Subsequent studies have identified the immediate emotional and psychological stress of loss of life, housing, and money, as well as longer-term stressors such as displacement, unemployment, and lack of social support that these disasters can cause (Lowe, Tracy, Cerda, Norris and Galea, 2013).

A full discussion of the effects of the trauma of a natural disaster is beyond the scope of this paper; rather, the focus is on disaster responders, those who come to an area shortly after a natural disaster has struck and seek to restore normalcy to the lives of those affected. Naturale (2007) reported a high incidence of Secondary Traumatic Stress (STS) in social workers who were disaster responders.

The purpose of this paper is to explore the impact of STS upon disaster responders and to consider the possibility of mitigating these adverse effects with Mind-body medicine practices such as Yoga, Mindful Breathing, and Guided Meditation. This is important because in a major disaster mental health services are often overwhelmed and unable to provide sufficient counseling to those in need.

In this paper, the author will demonstrate that Mind-body practices can be employed by disaster responders as an effective means of self-care in order to mitigate the adverse effects of Secondary Traumatic Stress. This review begins by looking at Post-Traumatic Stress Disorder (PTSD) before moving to consider STS in disaster responders.

Search methodology

Articles for this review were obtained by a search of peer reviewed, full-text articles using Google Scholar and Saybrook University library's Medline, PsycINFO, Annual Reviews, ERIC, ProQuest Central, and ProQuest Dissertation & Theses databases. Keywords used were: PTSD, disaster, hurricanes, trauma, STS, Secondary Traumatic Stress and disaster responders. References cited in published articles were followed up as well. For the purpose of this paper articles from 2000 – 2017 were viewed to be of special interest, however, a Helzert, Robbins, & McEvoy (1987) review article was cited for comparison to later works.

Post-traumatic stress disorder

In 1980, the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* first recognized Post-Traumatic Stress Disorder (PTSD) and stated, "Stressors producing

this disorder include natural disasters (floods, earthquakes), accidental man-made disasters (car accidents with serious physical injury, airplane crashes, large fires), or deliberate man-made disasters (bombing, torture, death camps)" (American Psychiatric Association, 1980, pp. 236-238).

Significantly, this 1980 document does not mention the impact upon those who witnessed someone being killed or injured; nor does it mention responders who arrive on the disaster scene and work among those who have experienced devastating loss of life, property and possessions due to a natural disaster.

Interestingly, an early review article of post-traumatic stress in the general population Helzer, Robins, and McEvoy (1987) found "that it exists but is uncommon except among wounded Vietnam veterans" (p. 1633). The conclusion that post-traumatic stress is uncommon except in veterans was refuted by Neria, Nandi, and Galea (2007) in their systematic review of 284 reports published in peer-reviewed journals since 1980 (when PTSD was first introduced in DSM-III).

They noted that exposure to disasters is quite common in America and concluded, "The evidence suggests that the burden of PTSD among populations exposed to disasters is substantial" (p. 476). Furthermore, in a review of the psychological trauma found in PTSD written for emergency mental health professionals, Flannery (1999) cautioned, "Untreated trauma and PTSD may result in permanent disability, medical and legal expense, increase sick leave, increased industrial accidents, social and community disorganization, lost productivity, and intense psychological distress. The toll in human suffering is enormous and unacceptable" (p. 81).

If this is true for disaster victims diagnosed with PTSD, what about disaster responders?

Secondary traumatic stress (STS)

Prior to September 11, 2001, the effects of a disaster on first responders went largely unnoticed. Following 9/11, studies of first responders at the World Trade Center (WTC) in New York City revealed the depth of the problem. Fullerton, Ursano, and Wang (2004) studied 204 first responders after 9/11 and found that "exposed disaster workers are at an increased risk of acute stress disorder, PTSD, and depression. In addition, exposed disaster workers seek care for emotional problems at a rate nearly four times that of the comparison group. Nearly 40.5% of the exposed disaster workers in this 13-month study met criteria for at least one diagnosis" (p. 1374).

Palm, Polusny, and Follette (2004) studied the potential hazards for disaster and trauma workers and reported, "Although studies suggest that physical proximity to traumatic events is related to a greater likelihood of experiencing traumatic symptomology, people who do not experience the event directly also may report stress reactions. This phenomenon has been referred to in the trauma literature as 'vicarious traumatization,' 'secondary traumatization,' or 'compassion fatigue' " (p. 73).

In a doctoral dissertation, Pow (2014) focused on mental health professionals who serve as disaster responders and used the term Secondary Traumatic Stress (STS) for the symptoms experienced by mental health professionals as "a result of working at length

with trauma survivors, a byproduct of exposure to and empathy for their suffering" (p.1). Assuming STS experienced by disaster responders is the same psycho-physiological and emotional response as that of those who acquire PTSD from first-hand exposure to a disaster, it would be of value to look at whether or not mind-body practices have been found effective in the treatment of PTSD.

Mind-body practices in PTSD

Mind-body practices have indeed been employed in the treatment for Post-traumatic Stress Disorder. Working with war-traumatized Kosovo high school students, Gordon, Staples, Blyta, and Bytyqi (2004), used mind-body techniques including "meditation, biofeedback, movement, guided imagery, drawings, autogenic training, genograms, and breathing techniques" (p. 143). Their study showed that "participation in mind-body skills groups significantly reduced PTSD symptoms in war-traumatized high school students in Kosovo" (p. 146).

Descilo et al. (2009) studied the effects of a yoga breath intervention alone and in combination with an exposure therapy for 183 individuals who had experienced post-traumatic stress disorder and depression following the 2004 South-East Asia tsunami. Their study "suggests that multicomponent mind–body programs, such as the 8-h yoga-based Breath Water Sound course enhanced with the 10-min Sudarshan Kriya, may provide safe, effective interventions for rapid and sustained relief of PTSD and depression following a mass disaster" (p. 10). They also found that adding traditional "exposure therapy" to the Yoga breath intervention did not show further benefit. The authors emphasize the value of their study is that it shows a simple mind-body breathing intervention can be rapidly deployed in massive natural disaster situations where one-on-one exposure therapy by healthcare professionals is not practical and often not possible.

Thompson, Arnkoff, and Glass (2011) have reviewed the literature on psychological interventions that use mindfulness and acceptance-based skills in the management of patients with PTSD. Mindfulness refers to practices that train an individual to sustain attention in the present moment and to develop a non-judgmental attitude toward what is experienced both in the surrounding environment (such as noise) and within one's body (such as intrusive thoughts). Mindfulness and acceptance counter the natural tendency of individuals to avoid discussing traumatic events and to suppress thoughts and emotions surrounding those events. Thompson et al. (2011, p. 229) report, "There is considerable evidence to support the hypothesis that trait mindfulness and acceptance are associated with greater adjustment following trauma, while experiential avoidance, emotional disengagement strategies, and persistent dissociation are associated with increased vulnerability to PTSD and global psychological dysfunction."

Kim, Schneider, Kravitz, Mermier, and Burge (2013) reviewed 92 articles that reported the use of Mind-body practices for PTSD, and found 16 that were suitable for inclusion in their review. A total of 1,065 participants were included in the 16 articles reviewed and the Mind-body practices used included "physical activities that focus on

interaction among brain, body and behavior, including yoga, tai chi, qigong, mindfulness-based stress reduction, meditation, and deep breathing" (p. 827). Their review showed that "Mind-body practices incorporate numerous therapeutic effects on stress responses, including reductions in anxiety, depression, and anger, and increases in pain-tolerance, self-esteem, energy levels, ability to relax, and ability to cope with stressful situations," (p. 829 and concluded, "Evidence presented in this review supports mind-body practices as an efficacious adjunct therapy for the treatment of PTSD. Mind-body practices may contribute to decreasing PTSD symptoms by offering participants opportunities to reduce stress levels, improve mood, reduce the intensity of PTSD arousal symptoms, and observe what they experience from a more relaxed state with less fear and more equanimity" (p. 833).

The fact that Mind-body practices do appear to be beneficial in management of PTSD raises the expectation that mind-body modalities will be beneficial for STS in disaster responders. The next section investigates that supposition.

Mitigation of the effects of STS in disaster responders

Berceli and Napoli (2006) have proposed a Mindfulness-based Trauma Prevention Program for social work professionals. The program begins by addressing avoidance behavior and the attempt to control rather than express one's emotions and thoughts. Next, disaster responders are taught to utilize Mindful Breathing, body scan, and mindfulness as well as trauma-releasing exercises "to lessen the long-term impact of traumatic experiences that may impair all aspects of their lives" (p. 1). Importantly, their Mindfulness-based Trauma Prevention Program is designed to be a self-help program that can be practiced alone or with groups. The authors feel all healthcare professionals who are disaster responders should be taught some form of stress-reduction practice such as the one they propose.

Park (2012) outlined the status and considerations for integrating mind-body Complementary and Alternative Medicine (CAM) interventions into clinical health psychology. Park states that mind-body interventions appear to be the CAM modalities most often used. These include deep breathing exercises, meditation, yoga, progressive muscle relaxation and guided imagery. In addition, she mentions biofeedback which can assist patients learn "to regulate their physiologic responses by providing direct and immediate feedback on the effectiveness of their attempts" (p. 50). Park provides a description for each of the common mind-body CAM practices including meditation, guided imagery, progressive muscle relaxation, deep breathing exercises, hypnosis, Yoga, Tai chi, and Qi gong. Importantly, a section in her paper is entitled, Mind-Body CAM Intervention Efficacy Research, which provides a brief summary of research findings for each mind-body practice discussed.

Conclusion

Natural disasters such as the three hurricanes (Harvey, Irma, and Marie) that made landfall in the United States and the raging forest fires of California during the summer of 2017 were not only devastating to those affected but also to disaster responders who came to render aid. Much has been written on the psychological and emotional impact of natural disasters on those directly affected but little was mentioned concerning the impact upon disaster first responders until the WTC disaster of 2001, in New York City. Since then, the impact of trauma on disaster responders has been extensively studied. The purpose of this paper was to look at the effect of Secondary Traumatic Stress in disaster responders and to review the evidence regarding whether or not mind-body medicine practices can help mitigate the impact of STS on disaster responders. Although discernment is required when evaluating published articles in Mind-body medicine, this brief review of the literature indicates mind-body medicine practices such as Yoga, Mindful Breathing and Guided Meditation can help mitigate the adverse effects of STS in disaster responders. This is important because in a natural disaster mental health professionals are often overwhelmed and cannot provide the care needed; conversely, mind-body self-care practices can fill the gap because they can be administered by disaster responders alone or in groups. For this reason, I believe all healthcare professionals who will be disaster responders should be taught some form of stress-reduction Mind-body practice prior to responding to a major natural disaster.

References

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd Ed.). Washington, DC: Author, 236-238. Retrieved from: http://displus.sk/DSM/subory/dsm3.pdf.

Berceli, D. & Napoli, M. (2006). A proposal for a Mindfulness-Based Prevention Program for social work professionals. *Complementary Health Practice Review, 11*(3), 153-165.

Descilo, T., Vedamurtachar, A., Gerbarg, P.L., Nagaraja, D., Gangadhar, B.N., Damodaran. B., Adelson, B, . . . Brown, R. (2009). Effects of a yoga breath intervention alone and in combination with an exposure therapy for post-traumatic stress disorder and depression in survivors of the 2004 South-East Asia tsunami. *Acta Psychiatry Scandinavia, 20,* 1–12. doi:10.1111/j.1600-0447.2009.01466.x

Flannery, R.B. (1999). Psychological trauma and Posttraumatic Stress Disorder: A review. *International Journal of Emergency Mental Health, 2,* 135-140.

Gordon, J.S., Staples, J.K., Blyta, A., & Bytyqi, M. (2004). Treatment of posttraumatic stress disorder in postwar Kosovo High School students using mind-body skills groups: A pilot study. *Journal of Traumatic Stress, 17*(2), 143-147.

Helzer, J.E., Robins, L.N., & McEvoy, L. (1987). Post-traumatic stress disorder in the

general population: Findings of the Epidemiologic Catchment Area Survey. *The New England Journal of Medicine, 317*(26), 1630-1634.

Lowe, S.R., Tracy, M., Cerda, M., Norris, F. & Galea, S. (2013). Immediate and Long-term stressors and the mental health of hurricane Ike survivors. *Journal of Traumatic Stress, 26,* 753-761.

Naturale, A. (2007). Secondary Traumatic Stress in Social Workers Responding to Disasters: Reports from the Field. *Clinical Social Work Journal, 35*(3), 173-181. Neria, Y., Nandi, A., & Galea, S. (2007). Post-traumatic stress disorder following disasters: A systematic review. *Psychological Medicine, 38.* 467-480. doi:10.1017/S0033291707001353.

Palm, K.M., Polusny, M.A., & Follette, V. (2004) Vicarious Traumatization: Potential Hazards and Interventions for Disaster and Trauma Workers. *Prehospital and Disaster Medicine, 19*(1), 73-78.

Park, C. (2012). Mind-body CAM interventions: Current status and considerations for integration into clinical health psychology. *Journal of Clinical Psychology, 69*(1), 45-63.

Pow, A.M. (2014). *Coping with catastrophe: Emotional regulation, adult attachment security, and mindfulness as predictors of posttraumatic stress among mental health disaster responders.* (Doctoral dissertation). University of North Carolina, Greensboro, NC. Retrieved from ProQuest Dissertation & Theses. (UMI No. 3624218).

Thompson, R.W., Arnkoff, D.B., & Glass, C.R. (2011). Conceptualizing mindfulness and acceptance as components of psychological resilience to trauma. *Trauma, Violence, & Abuse, 12*(4), 220-235.