

**Moving Through Trauma:  
Kundalini Yoga as Adjunctive Therapy for Survivors of Intimate Partner Violence**

**by  
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**Submitted in partial fulfillment of the requirements**

**for the degree of**

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## **Abstract**

### Moving Through Trauma: Kundalini Yoga as Adjunctive Therapy for Survivors of Intimate Partner Violence

by Lauren Fleming

Intimate partner violence impacts all aspects of a woman's being. This abuse often leads to symptoms of posttraumatic stress disorder and complex trauma. These symptoms can effect either overarousal or underarousal of the nervous system. Incorporating the body in therapy may be a key element in healing from this trauma. Yoga has been found to be a beneficial adjunct therapeutic modality to psychotherapy. This thesis specifically investigates Kundalini yoga, the yoga of awareness, as a potential healing modality for survivors of intimate partner violence. Utilizing a qualitative, hermeneutic methodological approach, the research examines the trauma to mind and body from intimate partner violence and posits aspects that need to be addressed therapeutically to serve this population better. Kundalini yoga is found to benefit to the healing journey for trauma survivors.

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**Dedication**

To my dear friend, Lisa LeVasseur.

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## **Chapter I Introduction**

A recent study found that three out of 10 women experience intimate partner violence in the United States (Wilson, Fauci, & Goodman, 2015, p. 586). Intimate partner violence (IPV) is a condition that impacts all aspects of a woman's being, including her personality, sense of self, and volitional ability. Experiences of IPV have been associated with developing symptoms of posttraumatic stress disorder (PTSD) (Black et al., 2011, p. 54). In particular, this female population has often been found to experience repeated trauma within the relationship as opposed to one isolated event, which leads to what psychiatrist and trauma expert Judith Herman (1992) called “complex PTSD” (p. 119). Complex PTSD has been found to have a negative impact on emotion regulation, consciousness, self-perception, relationships with others, and an individual’s sense of meaning (National Center for PTSD, 2016).

Trauma is exhibited by the body either through symptoms of overarousal, including anxiety, fear, and hypervigilance, or through symptoms of underarousal such as emotional numbing and dissociation (Emerson & Hopper, 2011, p. 21). Exploring ways to manage overarousal and underarousal symptoms may be important when treating those who have experienced trauma. It appears that individuals who have been repeatedly abused are more prone to experience a psychological disconnection from their bodies—herein referred to as *disembodiment*—that becomes a necessary aspect of their survival

(Levine, 2010, p. 102). Readdressing and reintegrating the body may then be a crucial aspect of moving out of dissociation.

Regarding the symptoms that those affected by PTSD may be experiencing, polyvagal theory, introduced by neuroscientist Stephen Porges (2011), may shed some light on the precise neurophysiology involved in the hyperarousal and underarousal states that are commonly experienced. The polyvagal theory posits the role of the vagus nerve in regulating the autonomic nervous system (p. 2). This theory has “provided us with a more sophisticated understanding of the biology of safety and danger, one based on the subtle interplay between the visceral experiences of our own bodies and the voices and faces of the people around us” (van der Kolk, 2014, p. 80). This thesis explores the function of the vagus nerve as proposed by polyvagal theory in an effort to provide guidance on how one may utilize body-based techniques, specifically Kundalini yoga, to affect the desired parasympathetic response in the treatment of trauma survivors.

When considering therapy modalities that address and incorporate the body, it appears that yoga may have value. According to renowned yoga teacher B. K. S. Iyengar (1979), “yoga is a timeless pragmatic science evolved over thousands of years dealing with the physical, moral, mental and spiritual well-being of man as a whole” (p. 13). David Emerson, yoga instructor and director of yoga services at the Trauma Center at the Justice Resource Institute, and Elizabeth Hopper (2011), a clinical psychologist specializing in trauma, wrote the book, *Overcoming Trauma Through Yoga: Reclaiming Your Body*, in which they propose utilization of a trauma-sensitive approach to teaching yoga. This way of approaching yoga adapts to the trauma survivor by creating safety and highlighting the importance of self-care and self-discovery (p. 27).

Kundalini yoga is known as the yoga of awareness and includes asanas, breathing techniques, mantras, mudras, and meditation. An asana is a physical posture that is used for health and meditation (Bhajan, 2012, p. 44). Mantras are “the creative projection of the mind through sound” and are used to “elevate or modify consciousness through their meaning and rhythmical repetition” (p. 66). Mudras are hand postures. Kundalini yoga also uses the concept of chakras in its practice. Chakras are energy centers in the body that direct “life energy for physical and spiritual well-being” (Dale, 2009, p. 237).

Some research has been published on the use of Kundalini yoga for mental health disorders including PTSD (Jindani & Khalsa, 2015 ; Jindani, Turner, & Khalsa, 2015; Shannahoff-Khalsa, 2012). The findings indicate that this particular type of yoga may offer beneficial tools to help manage symptoms of PTSD and bring the body into the healing process after experiencing IPV. This research suggests further exploration and understanding of more body-based techniques to work with those who have been impacted by trauma.

### **Researcher’s Interest in the Topic**

I initially became interested in the psychology of trauma as related to yoga after I experienced IPV in a relationship. The physical and emotional effects of this trauma had a long-lasting impact on all aspects of my life. During my healing process, I was introduced to Kundalini yoga and discovered the benefits of this practice in my life. Although I did not realize at the time that Kundalini yoga was helping me process this trauma and reconnect with my body, I became interested in exploring how and why this practice contributed to my own healing and how could it benefit others.

My experiential understanding of the notion that “mind doesn’t dominate body, it becomes body—body and mind are one” (Pert, 1997, p. 187) influenced my interest in exploring physical practices as adjunct to traditional talk therapy. I became interested in how the physical practice of specific Kundalini yoga exercises and meditations may contribute to physical, emotional, and spiritual healing for IPV survivors. This thesis thus examines the effects of IPV and explores aspects of Kundalini yoga that may contribute therapeutically to addressing the sense of disembodiment and promote neuroregulation in processing the trauma. The focus of the research is how Kundalini yoga may be practiced in a trauma-informed way that can be utilized effectively in psychotherapeutic treatment and if there are any potential negative consequences to using this modality with survivors of IPV.

### **Contextual Rationales**

There is limited research that links Kundalini yoga and trauma survivors; however, based on his experience as Director of The Research Group for Mind–Body Dynamics at the BioCircuits Institute, University of California, San Diego, David Shannahoff-Khalsa (2012) claimed that Kundalini yoga is an appropriate method to utilize in treatment of mental health disorders. Other studies have found that talking about trauma can be an incredibly difficult experience for many people, because “traumatic events are almost impossible to put into words” (van der Kolk, 2014, p. 233). Although psychotherapy can help individuals process the trauma they have endured, limitations have been found to using only this type of therapy in such cases (Emerson & Hopper, 2011; van der Kolk, 2014). These limitations along with the prevalence of IPV indicate the necessity of seeking other modalities as adjunct to talk therapy to address the

symptoms that arise out of this traumatic experience. Further research into how exactly the sets of movement, breathing, and meditation practiced in Kundalini yoga may work to treat specific disorders is therefore warranted.

## **Methodology**

**Research problem.** Intimate partner violence is a prevalent condition that impacts many women in our society (Wilson, Fauci, & Goodman, 2015, p. 586). Many of these women end up with symptoms of PTSD (Black et al., 2001, p. 54). Although talk therapy can be of benefit for these individuals, oftentimes the effects of the trauma from IPV continues to persist. These individuals are often prone to dissociation. Due to potentially experiencing a disconnection with the physical body, these trauma survivors may need more than talk therapy to address their symptoms of PTSD. Use of adjunctive modalities may be called for to help support IPV survivors. While yoga appears to be a viable way of addressing the element of dissociation and regulating one's nervous system, there is limited research that supports using this modality with trauma survivors.

**Research question.** This research seeks to answer the question: How can utilizing a physical practice such as Kundalini yoga facilitate healing the effects of trauma and promoting empowerment in victims of intimate partner violence? This inquiry involves an exploration of the psychological and physiological aspects of trauma. It also involves looking at the aspects of yoga, in particular, Kundalini yoga, that may be beneficial to utilize as a healing modality for this population.

**Methodological approach.** In an attempt to understand the impact of IPV and explore the utilization of Kundalini yoga in treating trauma in its victims, a qualitative, hermeneutic methodology was employed. Through examining texts and theories related

to the topic of the research, a qualitative hermeneutic approach seeks to find the relationship between concepts in an effort to explore their potential meaning (Pacifica Graduate Institute, 2016, p. 52). Utilizing a qualitative hermeneutic approach allow exploring IPV and Kundalini yoga separately as well as the potential relationship between them. My personal experience is briefly discussed to clarify the experiential aspects of PTSD when Kundalini yoga is an adjunct treatment to talk therapy.

Research for this thesis focused specifically on IPV within the United States and did not explore its occurrence in other cultures; therefore, generalization of the findings is limited. Another limitation to note is that this thesis explores the impact of IPV on women, and although men also suffer this type of abuse, the research on this topic did not include this population.

### **Ethical Considerations**

Having personal experience of IPV presented a challenge to engaging in this research in term of interfering with an objective perspective. I also have a personal relationship with the practice of Kundalini yoga and, thus, the potential for bias regarding the use of this particular modality for treating trauma. I therefore maintained an awareness of these connections while conducting my research and was open to the possibility that this modality may have drawbacks in use with a traumatized population.

### **Overview of Thesis**

Chapter II presents a review of literature that explores the physical, emotional, and spiritual effects of IPV. The components of the practice of Kundalini yoga—meditation, mudras, mantras, chakras, and asanas—are described, and the efficacy of yoga in general as a treatment modality in therapy is explored. The review includes



discussion of research and theories related to how a trauma-sensitive use of Kundalini yoga may facilitate healing for those affected by PTSD. In this regard, literature on the mind–body connection, polyvagal theory, PTSD, and complex trauma is explored.

Chapter III integrates the research from Chapter II on intimate partner violence and Kundalini yoga with a consideration of the potential of this type of yoga for aiding the healing process for trauma due to IPV. Chapter IV summarizes the findings of the research and provides conclusions. The implications of the research are discussed in terms of Kundalini yoga's use as a tool in the therapy room as well as its potential as a therapeutic adjunct to psychotherapy. Recommendations for further research on this topic are provided.

## **Chapter II**

### **Literature Review**

This chapter presents a review of literature that begins with describing the nature of IPV and the resulting trauma in order to provide better understanding of the physical, emotional, and spiritual effects of this experience on survivors. The neurological effects of trauma and complex trauma are explored in relation to IPV. Research related to the potential of Kundalini yoga as a therapeutic modality for those impacted by this type of abuse is also reviewed. The background of Kundalini yoga is discussed along with research on its efficacy in treating mental health disorders. Research on trauma-informed yoga practices is reviewed and their potential efficacy is considered in working with those who have experienced adverse symptoms due to IPV.

#### **Intimate Partner Violence**

IPV, defined as “physical violence, sexual violence, stalking and psychological aggression by a current or former intimate partner” (Centers for Disease Control and Prevention [CDC], 2016), impacts individuals of all backgrounds including race, culture, socioeconomic status, gender, and sexuality. The CDC performs an ongoing study of intimate partner violence called the National Intimate Partner and Sexual Violence Survey (NISVS). In 2010, over 16,000 interviews were completed on 9,086 females and 7,421 males (Black et al., 2011, p. 9). The 2010 survey found that 3 in 10 women in the United States (28.8%, about 34.2 million women) have experienced rape, physical violence, and/or stalking by an intimate partner (Black et al., 2011, p. 54).

IPV differs from isolated traumatic events in that, about half of the time, it is chronic, repetitive in nature:

The National Violence Against Women Survey which included a nationally representative sample of 8,000 women and 8,000 men ages 18 and older found that approximately half of the women raped by an intimate partner and two-thirds of the women physically assaulted by an intimate partner had been victimized multiple times by that partner. Female rape victims reported an average of 4.5 rapes by the same partner, and female physical assault victims reported an average of 6.9 assaults. For those women, the average victimization lasted 3.8 years for rape victims, and 4.5 years for physical assault victims. (Rand & Saltzman, 2003, p. 137)

Those who experience intimate partner abuse may experience long-lasting negative physical and mental health symptoms. According to the 2010 NISVS, among female victims of IPV, 62.6% reported at least one symptom of posttraumatic stress disorder, 41.6% reported an injury, and 22.1% needing medical care (Black et al., 2011, p. 54).

Another notable characteristic of IPV is its long-lasting impact. Ilsa Evans (2007), a writer who focuses on violence against women, conducted research from 2003-2005 with 134 female IPV survivors. Her findings confirmed that “an abusive relationship will reverberate in a variety of ways and degrees, for the remainder of the lives of most survivors” (p. 6).

Looking more closely at the observed consequences of IPV, the CDC (2016) described several physiological health conditions associated with IPV, including cardiovascular disease, gastrointestinal disorders, and migraines as well as reproductive system disorders and conditions. Perhaps the greatest damage, however, is psychological in nature, as observed in Evans’s (2007) research, noted above. The psychological consequences of IPV include anxiety, depression, PTSD, suicidal behavior in females, emotional detachment, sleep disturbances, and inability to trust others (CDC, 2016). A

notable social impact is isolation from social networks (CDC, 2016). The most commonly mentioned psychological conditions in IPV survivors are elevated rates of posttraumatic stress disorder (PTSD), depression, and substance abuse (Wilson et al., 2015, p. 588).

### **PTSD and Complex PTSD**

According to the National Center for PTSD (2016), an individual is diagnosed with PTSD when his or her symptoms:

- Last longer than three months
- Cause great distress
- Disrupt work or home life (para. 1)

The National Center for PTSD identified four key categories of PTSD symptoms:

1. Reliving the event (also called re-experiencing symptoms) . . . .
2. Avoiding situations that remind you of the event . . . .
3. Negative changes in beliefs and feelings . . . .
4. Feeling keyed up (also called hyperarousal, or hypervigilance). (“What are the symptoms of PTSD?” para. 1)

Women may be particularly susceptible to these symptoms, because it has been found that “women more frequently suffer from PTSD than men for reasons that are not entirely clear” (Sherin & Nemeroff, 2011, p. 273).

Herman (1992) observed and championed her finding that trauma is further complicated by chronic, repeated abuse by proposing a new syndrome:

In survivors of prolonged, repeated trauma, the symptom picture is often far more complex. Survivors of prolonged abuse develop characteristic personality changes, including deformations of related and identity. . . . The syndrome that follows upon prolonged, repeated trauma needs its own name. I propose to call it “complex post-traumatic stress disorder” (p. 119)

The National Center for PTSD (2016) categorized the spectrum of symptoms of complex PTSD (C-PTSD) as follows:

- Emotional Regulation. May include persistent sadness, suicidal thoughts, explosive anger, or inhibited anger.
- Consciousness. Including forgetting traumatic events, reliving traumatic events, or having episodes in which one feels detached from one's mental processes or body (dissociation).
- Self-Perception. May include helplessness, shame, guilt, stigma, and a sense of being completely different from other human beings.
- Distorted Perceptions of the Perpetrator. Examples include attributing total power to the perpetrator, becoming preoccupied with the relationship to the perpetrator, or preoccupied with revenge.
- Relations with Others. Examples include isolation, distrust, or a repeated search for a rescuer.
- One's System of Meanings. May include a loss of sustaining faith or a sense of hopelessness and despair. ("What are additional symptoms in Complex PTSD?" para. 1)

This list reflects Herman's (1992) claim that "traumatic events overwhelm the ordinary systems of care that give people a sense of control, connection, and meaning" (p. 33).

Another unique aspect of IPV is the element of betrayal that is experienced by the victim. Increasing research suggests that both the severity and quality of PTSD symptoms are directly related to the experience of betrayal (Freyd, Klest, & Allert, 2005, p. 86; Kelley, Weathers, Mason, & Pruneau, 2012, p. 412). In addition, research shows a correlation between the degree of betrayal and dissociation, as in one study's findings that "HBTs [High in Betrayal Traumas] were associated with more depression, dissociation, and PTSD symptoms than MBTs [Moderate in Betrayal Traumas] and LBTs [Low in Betrayal Traumas] (Martin, Cromer, DePrince, & Freyd, 2013, p. 110).

### **Dissociation in PTSD**

Psychologist Jennifer Freyd, a longtime researcher on the traumatic effects of betrayal, recently found a correlation between high-betrayal trauma and shame and dissociation in female trauma survivors (Platt & Freyd, 2015, p. 402). This result suggests that IPV survivors suffering with PTSD, in particular, may be more prone to

dissociation. Research conducted by trauma experts found another relationship between dissociation and PTSD:

Dissociation at the time of trauma is the primary predictor for the later development of PTSD (van der Kolk & van der Hart, 1989). Individuals who actively dissociate at the time of a traumatic event are much more likely to develop subsequent symptoms of PTSD than those who do not (Bremner et al., 1992; Holen, 1993; Cardena & Spiegel, 1993). (Scaer, 2001, p. 80)

The International Society for the Study of Trauma and Dissociation (2015) indicated five “main ways in which the dissociation of psychological processes changes the way a person experiences living: depersonalization, derealization, amnesia, identity confusion and identity alteration” (“What is dissociation?” para. 3). Depersonalization is described as one’s detachment from one’s physical body (“What is depersonalization?” para. 1). The symptom of dissociation thus can be viewed as the severing of the link between the mind and the body in the face of trauma.

Neurologist Robert Scaer (2014), author of *The Body Bears the Burden*, discovered a connection between a particular type of traumatic experience—a motor vehicle accident—and the collection of whiplash symptoms, which align with the experience of traumatic dissociation:

The behavior, perceptions, and sensations preceding the freeze response typified the immediate post-accident experience of my whip-lash patients—a state of shock, numbing, immobility and even depersonalization. I realized that the mental state called dissociation very likely represents what humans consciously experience while in the freeze [autonomic nervous system response]. (loc. 321)

Research by trauma specialists Peter Levine (1997, 2010), van der Kolk (1996, 2014), Scaer (2011, 2014), and others confirms that the body impacts the mind and the mind impact the body, particularly in the case of life-threatening trauma. Referring to

correlating the physical symptoms of his motor vehicle accident patients with recent research on brain physiology in PTSD, Scaer (2014) wrote,

The consistency of these findings among patients and their startling correlation with concepts of altered brain/autonomic physiology has led me to the inescapable conclusion that clinical syndromes previously categorized as “malingering,” or “non-physiological,” “psychosomatic,” or “functional” are based on altered brain physiology secondary to trauma. (loc. 360)

### **Physiological Stress Response and Dissociation**

Of all the psychiatric disorders, PTSD is the one with the strongest relationship with somatization.

McFarlane, 2010, p. 6

The term *allostasis* refers to an organism’s autonomic physical processes that engage to achieve homeostasis in response to stressors, such as when the organism is subjected to trauma (Streeter, Gerbarg, Saper, Ciraula, & Brown, 2012, p. 572). The organism necessarily has an automatic physiological response in an effort to attain homeostasis (p. 2). When an organism is threatened, the sympathetic nervous system (SNS) engages to dilate blood vessels in skeletal muscle, constrict blood flow to skin and viscera, hasten the heartbeat and increase blood pressure—in general, prepare the body for fight or flight (Scaer, 2014, p. 11). When the threat subsides, the parasympathetic nervous system (PNS) engages, the heart rate slows, blood pressure lowers and blood vessels dilate to the viscera (rest/digest state) (p. 13).

The PSN and SNS are part of the autonomic nervous system (ANS), meaning that these systems work without any willful direction on the part of the individual; these survival methods have evolved as automatic safety measures designed to help keep the organism alive (Sherin & Nemeroff, 2011, p. 263). Research has found, however, that although these systems are autonomous, the PNS in particular can be triggered from the

“bottom up”, specifically through the use of the mammalian-unique diaphragm—the breath regulator (Pal, Velkumary, & Madanmohan, 2004, p. 115); thus, in humans, deliberately slowing their breath will trigger the PNS, and the body responds with more rest/digest (p. 115).

In addition to the fight and flight state in animals is the *freeze* response, a state of total immobility, which an animal will enter when faced with utter helplessness (Scaer, 2014, p. 13). This freeze response—a kind of extreme state of rest/digest—is caused and controlled by the parasympathetic nervous system (Porges, 2011, loc. 1156). In a state wherein a life threat is combined with helplessness, first, the sympathetic response engages and the parasympathetic response is suppressed, and then the parasympathetic “overdrive” or shut-down response is triggered, and the organism goes into the freeze response (Payne, Levine, & Crane-Godreau, 2015, p. 6).

Survivors of PTSD can experience a range of psychological symptoms that correlate with autonomic nervous system states of fight, flight, and freeze. When an individual experiences a flashback to a single traumatic event, for instance, the sympathetic nervous system is aroused and the individual’s blood pressure rises heart rate increases and adrenal system engages faster (Levine, 2010, p. 103). Levine (2010) noted, however, that individuals who experience chronic abuse have a different nervous system response:

Highly traumatized and chronically neglected or abused individuals are dominated by the immobilization/shutdown system. . . . Chronically traumatized individuals generally show no change or even a decrease in heart rate. These sufferers tend to be plagued with dissociative symptoms, including frequent spacyness, unreality, depersonalization, and various somatic and health complaints. (p. 102)



As noted earlier, Scaer (2014) similarly correlated the freeze response with dissociation as a response to trauma. The previously discussed critical condition for eliciting the freeze response in animals is helplessness, which researchers term *inescapable shock* (p. 14). Scaer (2014) stated that under the condition of helplessness, a trauma can invoke the freeze response and the corresponding dissociation (p. 14). He found that in this situation, any mobility-related energy roused by the SNS, instead of being enacted by the body, will literally be stored in the body, in the procedural memory in the brain (p. 16). Procedural memory is the part of the brain that stores skills such as walking and riding a bike (p. 34). It is the part of the brain that could be called *muscle memory* and is believed to be “not accessible via thoughts or images but via physical sensation (proprioception and kinesthesia)” (Payne et al., 2015, p. 12). An inescapable traumatic event will record in procedural memory instructions something like this, for example, seconds before a car accident: “Raise left arm over head to brace for impact, right leg exerts maximum effort on the brake pedal, right arm cranks steering wheel hard left.” A split second later, though, when the freeze response takes over, those instructions simply never execute, even though they are still recorded in procedural memory (p. 12).

Moreover, Scaer (2014) has found that these memories have a disturbing property of accumulation over one’s lifetime, which can lead to “increasing vulnerability and decreasing resiliency to further trauma” (Kindle loc. 306). Initially, the traumatized individual’s nervous system can alternate between the aroused SNS and the PNS freeze state, but Scaer found that, over time, the chronic freeze state dominates (p. 13). This biological predisposition which increases vulnerability is defined as *limbic kindling*, “a condition where either repeated neurological exposure to initially chronic sub-threshold

stimulus, or a short-term high intensity stimulus (e.g. brain trauma), can eventually lead to persistent hypersensitivity to the stimulus” (Gatrix, 2014, p. 12). Kindling results in a “hard-wired” response to stimuli—and not even necessarily life-threatening stimuli—that has proven to be particularly resistant to extinction (Gatrix, 2014, p. 12). This research on the phenomenon of kindling lends support to Evans’s (2007) observations about the lifelong impact of IPV and why healing complex PTSD is so difficult.

In nature, when an animal comes out of the freeze state, it will shake, shudder, and sigh, an activity that what Levine called the “freeze discharge” (as cited in Scaer, 2014, p. 15). It is believed that this discharge erases or extinguishes the trauma from the ledger of somatic, procedural memory in the animal, enabling further healing. Payne et al. (2015) discussed how this resetting can be thwarted in humans:

Animals in the wild recover spontaneously from this [freeze] state; involuntary movements, changes in breathing patterns, yawning, shaking, and trembling, release or discharge the intense biological arousal; these phenomena have been observed repeatedly by . . . [Peter Levine] over 45 years of clinical experience, and confirmed through numerous anecdotal accounts by those who work professionally with wild animals; however we have not been able to find any significant treatment of these phenomena in the peer-reviewed literature. In humans, a variety of factors can thwart this “resetting” of the nervous system: fear of the discharge process itself, prolongation of the traumatic situation, complex cognitive and psycho-social considerations, cortical interference. This failure to reset leaves the nervous system stuck in a dysregulated state. It is when the spontaneous “reset” fails that we see lasting post-traumatic symptoms. (p. 14)

### **PTSD-Specific Physiology**

As described above, two key physiological states typically affect PTSD survivors: hyperarousal or fight/flight state and immobility or “freeze” state (Levine, 2010, p. 102). With regard to the following explication of these condition, it should be noted that the

pathways for acute response to a threat are located in the right half of the brain (Scaer, 2014, p. 7).

**Overactive sympathetic response.** When the SNS engages, it is primarily an endocrine system response from the hypothalamic-pituitary-adrenal axis (HPA), which results in a release of stress hormones such as cortisol and epinephrine (adrenaline) (Bell & Ross, 2014, p. 162). McFarlane (2010) and others have confirmed that in a state of *overactive* sympathetic/fight-or-flight system, enhanced negative feedback of the HPA occurs, which fosters the mental/cognitive experience of hyperarousal and hypervigilance (p. 6). Long-term release of stress hormones has a deleterious effect on the nervous system, and the following neurological effects have been researched and confirmed:

1. Reduced volume and function of the *hippocampus*, resulting in impairment of memory making and in the ability to discern current from past memories (Sherin & Nemeroff, 2011, 272). Some studies indicate a direct relationship between the severity of trauma and the (smaller) size of the hippocampus (Bell, 2014, p. 164). Research also suggests that each subsequent flashback creates further damage to the hippocampus (Bell & Ross, 2014, p. 164).
2. Increased *amygdala* response; increased sensitivity to fear and threats (Bell & Ross, 2014, p. 163).
3. Impairment of the *prefrontal cortex*, which, among other executive and cognitive functions, is responsible for down-regulating the right amygdala (i.e., calming the amygdala down so it does not perceive everything as a threat) (Bell & Ross, 2014, p. 164).

4. Impairment or shutting down of *Broca's area*, responsible for language and speech (Levine, 2010, p. 113), making it particularly difficult for PTSD survivors to talk about what they are thinking and feeling (Emerson, 2015, p. 23).
5. Impairment of *vagus cranial nerve* functionality.

Regarding #5 in this list, in a state of PTSD, nervous system signals travel between the viscera toward the brain via the vagus nerve. Stimulation of the vagus nerve has been shown to improve memory consolidation (Hays, Rennaker, & Kilgard, 2013, p. 7) and is sometimes prescribed as a treatment for epilepsy (Hays et al., 2013, p. 12). Additionally, research has shown that vagus nerve stimulation facilitated extinction of conditioned fear (Pena et al., 2014, p. 1). The vagus nerve is discussed in more detail below.

**Chronic freeze response.** When an organism triggers the freeze response, the body releases endorphins, a natural analgesic, which serves to numb both physical and emotional pain (Bell & Ross, 2014, p. 160). More research on this response is needed, but current research suggests that the following brain changes occur due to chronic freeze response (Bell & Ross, 2014, p. 164):

1. The *anterior cingulate cortex* may lose neurons, resulting in a reduced ability to respond to emotionally relevant stimuli; Scaer (2014) indicated a failure of activation in the right cingulate in PTSD victims (p. 66). Through the use of fMRIs, researchers have found that the parts of the brain associated with bodily awareness sensation, the right anterior insula and cingulate, are strongly inhibited when an individual is in a dissociated state (Levine, 2010, p. 112).

2. The *corpus callosum*, the pathway between the left and right hemispheres, has been shown to be smaller in abuse survivors, and may result in a reduction in problem solving and abstract reasoning (Bell & Ross, 2014, p 164).
3. A decrease occurs in the activity of the part of the *cerebellum* responsible for integrating sensory information with motoric action (Bell & Ross, 2014, p 164).

Scaer (2014) observed that, in general, the impact of trauma on the brain is “basically indistinguishable from that caused by brain injury” (p. 42). One of the most recently researched components of the neurological system, the vagus nerve, has been found to play a crucial role in the dynamics of trauma.

**Polyvagal theory.** The vagus nerve, the 10th cranial nerve, is a multibranched, asymmetrical nerve that serves the control (efferent) and sensory (afferent) signals between the brain and the organs in the thoracic cavity, including the heart and the larynx; 80% of the vagal nerve fibers (afferent nerve fibers) send signals from the body to the brain (Levine, 2010, p. 120). For nearly 40 years, Porges (2011) has been devoted to understanding the explicit dynamics of the vagus nerve and how it has evolved to function in such a manner (p. 2). His research has produced the polyvagal theory, which illuminates the specific activities of the vagus nerve branches as well as the left/right subdivisions of the branches. His theory describes the activity of the vagus nerve complex not only as an antidote to a hyperstimulated SNS but also as being responsible for the freeze response (Porges, 2011, loc. 791).

The polyvagal theory essentially “links the evolution of the autonomic nervous system to affective experience, emotional expression, facial gestures, vocal

communication and contingent social behavior. Thus, the theory provides a plausible explanation of several social, emotional and communication behaviors and disorders” (Porges, 2008, p. 8)

Moreover, according to this theory, the autonomic nervous system is organized into three subsystems that are “phylogenetically ordered and behaviorally linked to social communication (e.g., facial expression, vocalization, listening), mobilization (e.g., fight-or-flight behaviors), and immobilization (e.g., feigning death, vasovagal syncope, and behavioral suppression)” (Porges, 2007, p. 122). Porges (2011) theorized that specific branches of the vagus nerve are key in the functioning of two of these parasympathetic nervous subsystems: social communication and immobilization. Table 1, below, summarizes Porges’ findings regarding the two parasympathetic nervous sub-systems.

Table 1

*Summary of Porges’s Theory of the Parasympathetic Nervous Subsystems*

Subsystem	Vagus nerve branch	Location and evolutionary timing	Function	High vagal tone effect
Social communication	Myelinated “smart” vagus nerve; nucleus ambiguus (NA)	Ventral; newer; mammalian	Inhibits (“brakes”) sympathetic nervous system response; dampens HPA; produces calm behavioral states; autonomic as well as can be willfully generated	Promotes healthy calming response.
Immobilization	Unmyelinated “vegetative” vagus nerve; Dorsal motor nucleus (DMNX)	Dorsal; older; reptilian	Extreme rest and digest PNS functions; produces freeze response; strictly autonomic	Freeze effect; highly neuroplastic; too high may be lethal

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 response
 

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*Note.* Author’s original table synthesized from Chapter 2, “Orienting in a Defensive World: Mammalian Modifications of Our Evolutionary Heritage: A Polyvagal Theory,” in *The Polyvagal Theory: Neurophysiological Foundations of Emotions, Attachment, Communication, and Self-Regulation*, by S. Porges, 2011, pp. 20-51. [Table is an original work; not Porges’.]

Although the mobilization subsystem relies on the working of the SNS and is not directly controlled by the vagus nerve, it *can* be attenuated by the stimulation of the vagus nerve (via activation of the myelinated vagus system—the social communication subsystem) (Porges, 2011, loc. 1278).

The critical understanding gleaned from Porges’s (2011) polyvagal theory is that the vagal nerve serves the parasympathetic nervous system in two unique functions: calming (ventral complex) and freezing (dorsal complex) (loc. 794). Research that measures a single vagal tone (parasympathetic activity) thus has limited value: “For example, in mammals, high tone from the dorsal motor nucleus vagal system may be lethal, whereas high tone from the NA vagal system may be beneficial” (loc. 1156).

A synthesis of the research regarding the context of the freeze response shows that high spikes in the dorsal vagal tone may indicate the following:

1. The moment when unrealized/suppressed somatic movement is “written” into the brain’s procedural memory,
2. the moment when dissociation is triggered, and possibly the start of PTSD,
3. an experience that is highly neuroplastic, kindled, and made hyper-sensitive, and,
4. when ongoing, a block to the “freeze discharge” or “biological completion,” which Levine (2010, p. 121) and others say is vital for healing trauma.

There appears, however, to be consensus in the research regarding high ventral vagal tone as a correlate to healthy functioning of the parasympathetic nervous system and growing support for the likelihood that deep breathing, such as that performed in yoga, may provide cardio-respiratory stimulation of the vagus nerve (Howland, 2014, p. 65). In addition, it appears that certain bodily movements may stimulate the vagus nerve.

Movement such as that practiced in yoga has been found to activate the PNS and may stimulate the vagus nerve (Shorter, 2014, p. 15). Because the vagus nerve runs through various parts of the body, certain postures have the ability to stimulate this nerve directly through asanas, such as in stretching the torso in a backbend (p. 15).

### **Healing Complex PTSD, Particularly Dissociation**

The National Center for PTSD (2016) described complex PTSD recovery as requiring “standard evidence-based treatments for PTSD” (“Treatment for Complex PTSD,” para. 1). The Center’s report noted, however, that

at the same time, treating Complex PTSD often involves addressing interpersonal difficulties and . . . specific symptoms. . . . Dr. [Judith] Herman contends that recovery from Complex PTSD requires restoration of control and power for the traumatized person. Survivors can become empowered by healing relationships which create safety, allow for remembrance and mourning, and promote reconnection with everyday life. (“Treatment for Complex PTSD,” para. 1)

Upon research and reflection on the biological underpinnings of trauma, the characteristics of complex PTSD look quite similar to the effects of chronic freeze response. Healing the damage of chronic freeze response is complex and given the impact on the speech center of the brain, psychotherapy alone may be insufficient. As Levine (2010) stated, the chronic freeze response “can almost completely suppress the social engagement system . . . [and those affected] are physiologically unavailable for face-to-face contact and the calming sharing of feelings and attachment” (p. 110). Scaer (2014)



concluded: “Cognitive therapy involving verbal interaction, insight, and interpretation under these conditions of impairment of verbal expression would be predictably difficult . . . [and] ‘talking about the trauma’ is rarely sufficient to dissipate the kindled, self-perpetuating trauma cycle” (p. 161). He suggested, however, that psychotherapy does play a vital role in healing by “initiating and ultimately completing the therapeutic process in trauma” (p. 162). He added that “encouraging trauma victims to verbalize . . . somatic sensations may allow them to access and integrate intense feeling states into conscious awareness” (p. 162). Finally, Scaer pointed out that “women are more prone to freeze/dissociate in the face of a life threat” (p. 164); thus, female IPV survivors may be even more in need of a somatic adjunctive therapy to psychotherapy.

### **Healing Therapy Incorporating the Body**

Trauma healing therapies that include the body are relatively new in roughly the past 25 years. In 1997, Levine introduced a somatic-based therapy called Somatic Experiencing® (SE®). He prescribed specific exercises for regaining bodily sensation, and tools for transforming trauma. The process consists of several tools but orients around the three general principles: (a) creation of an environment of safety, (b) reconnection with the sensations of the body, and (b) the therapist’s careful guidance of the discharge process (Levine, 2010, pp. 74-94).

Creating a safe environment starts with the process of a client coming back in touch with the sensations in her or his body. In this way, the client becomes reacquainted herself with the boundary of the body, a sense that is lost for IPV trauma survivors (Ogden, Minton, & Pain, 2006, p. 206). Reconnecting with the sensations of the body is the common thread of the entire SE® experience, with the therapist always checking in

on what the client is feeling in her or his body. The bodily sensations start the process of touching into the stored somatic memory. This process must be conducted in a careful, supported way in order to avoid the client becoming retraumatized or overwhelmed. Regarding memory of the trauma, van der Kolk (2014) also emphasized the importance of this reconnection by stating that trauma victims cannot recover until they become familiar with and befriend the sensations in their bodies (p. 102). He summarized his observations regarding the state of his trauma patients' somatic experience:

I was amazed to discover how many of my patients told me they could not feel whole areas of their bodies. Sometimes I'd ask them to close their eyes and tell me what I had put into their outstretched hands. Whether it was a car key, a quarter, or a can opener, they often could not even guess what they were holding—their sensory perceptions simply weren't working. (p. 91)

The therapist carefully guides the discharge process, utilizing *pendulation*, alternating between charge/activation and discharge/deactivation, which is actually moving between SNS and PNS autonomic responses (Payne et al., 2015, p. 11). The therapist, in this case, is therefore helping the individual not to become stuck in one set of responses or the other. Mind–body researchers Peter Payne, Levine, and Mardie Crane-Godreau (2015) explained that in “normal” (p. 11) conditions, the SNS and PNS behave in alternating fashion, as a sine wave. In extreme conditions, the amplitude of the sine wave becomes too high or too low. The objective of SE® pendulation is to keep the sine wave at a manageable amplitude in order to facilitate gradual discharge. Maintaining this position requires the therapist to be able to gauge where the individual is on the spectrum and to interrupt the “trauma vortex” if the SNS takes over (p. 11).

If the individual begins to be sucked into the trauma vortex, a tool in Levine's (2010) SE® approach is the use of vocalization using the syllable “vooo” (p. 125). He

described the effects of vocalizations such as chanting or sounding as “pleasurably stimulating the many serpentine branches of the vagus nerve” (p. 125). Porges (2011) confirmed the impact of chanting or vocalizing on the ANS as triggered from the ventral vagal nerve complex:

Vocal music duplicates the effect of vocal prosody and triggers neural mechanisms that regulate the entire social engagement system with the resultant changes in facial affect and autonomic state. . . . Moreover, slow exhalation, the respiratory process associated with expressive social vocalizations, enhances the impact of the myelinated vagus on the heart, promoting calm states. (loc. 4417)

To paraphrase Porges’s theory, this could be considered a bottom-up trigger of the PNS response through the deliberate use of bodily mechanisms—deep breathing and vocalization, in this case.

Payne et al.’s (2015) case study on the application of the SE® process described their use of the “vooo” vocalization and posited that the results may be due to

increased afferent signaling from the diaphragm due to stretching by prolonged exhalation; increased visceral afferent impulses from the abdomen due to sound vibration; and resetting the breathing to a more parasympathetic pattern by lessening CO<sub>2</sub> loss by slowing the breath rhythm and extending the exhalation. The deep pitch of the sound may also play a role. (p. 13)

In conjunction with psychotherapy, therapists may be able judiciously to utilize these kinds of bottom-up somatic experiences to modulate each individual’s current state of autonomic nervous system. Several of the techniques employed in SE® have analogues in yoga practice, in general, and Kundalini yoga, in particular. These practices include breathing exercises, chanting and movement.

### **Kundalini Yoga**

Kundalini yoga as taught by Yogi Bhanan was brought from India to the West in 1969 (Shannahoff-Khalsa, 2012, p. 1). It is speculated that the teachings of Kundalini

yoga date back to 7000 B.C.E., where the techniques were established and practiced by rishis, who were known as people of power, in the Indus river valley (Shannahoff-Khalsa, 2012, p. 2). Kundalini yoga is considered the yoga of awareness. According to Yogi Bhajan (2007), this form of yoga is “the supreme technology to awaken your awareness and take you into your original Self” (p. 17). He described Kundalini yoga as “a science which works on the seven chakras, the arcline, and the aura (the Eighth Chakra)” (p. 20). Kundalini energy is the “creative potential” (p. 20) that is experienced when “the energy of the glandular system combines with the energy of the nervous system to create such a sensitivity that the totality of the brain receives signals and integrates them” (p. 20).

As described by Yogi Bhajan (2012), each chakra has a specific name, location, associated organ(s), color, qualities, and shadow side (p. 185). Kundalini yoga focuses on eight chakras in an effort to open and balance them through yoga sets (p. 184). The first three chakras are considered to be in the lower triangle, and the fifth through eight chakras comprise the upper triangle. The fourth chakra, the heart chakra, is the balance point between the lower and upper triangles (p. 184).

Yogi Bhajan (2012) stated that the first chakra, *muladhara*, is associated with security and survival (p. 185). This chakra is located at the end of the spine. The second chakra, known as *svadisthana*, is located at the sex organs and is associated with creativity. The third chakra is *manipura* is located at the navel and is associated with action and balance. The fourth chakra is known as *anahata* and is located at the middle of the chest. This chakra is associated with love and compassion. The fifth chakra is called *vishuddha*, and is associated with the projective power of the word. The location of this chakra is at the throat. The sixth chakra is known as *ajna*, which is associated with

intuition, wisdom, and identity. Ajna is located between the eyebrows. The seventh chakra is *shasrara*. This chakra is associated with humility and vastness and is located at the crown of the head. The eighth chakra is the *aura*, which is associated with radiance (p. 186). The aura is located in the electromagnetic field and it combines the effects of all the chakras (p. 186).

The standard Kundalini yoga class consists of a sequence-specific exercise set followed by a meditation technique (Shannahoff-Khalsa, 2012, p. 2). These exercise and meditation sets may consist of asanas, mantras, breathing techniques, and mudras. In this system of yoga, a mantra is always chanted prior to doing any of the techniques, a practice which is called *tuning in*. The purpose of tuning in is to help “induce a protected meditative state of mind and keep the practitioner both balanced and safe” (p. 3).

### **Summary**

Survivors of IPV often develop symptoms of PTSD, in particular dissociation where they experience a disconnect between the body and the mind (Black et al., 2001, p. 54). The vagus nerve has been found to play a role in the neurophysiology of trauma and it appears that there is a correlation between high ventral vagal tone and a healing functioning parasympathetic nervous system. Stimulation of this nerve may be an important aspect of healing trauma.

It has been found that psychotherapy alone may be insufficient to address trauma due to the impact trauma has on the speech center of the brain (Levine, 2010; Emerson, 2010). Therefore, utilization of the body along with psychotherapy may be useful when working with trauma survivors. Yoga may be one way of integrating the body into therapy. Aspects of Kundalini yoga, including deep breathing, movement, and chanting

have the potential to stimulate the vagus nerve and help facilitate healing for a survivor of IPV.

## **Chapter III**

### **Findings and Clinical Applications**

Abuse of any kind undermines the natural development process as it interferes with the internal wiring of the physical, emotional, and psychic system.

Judith, 1996, p. 263

#### **Introduction**

Based on my area of interest and contextual rationale, I proposed the following research question: How may Kundalini yoga serve as an adjunct healing modality to psychotherapy for survivors of IPV? This chapter summarizes my research findings with regard to the importance of integrating the body into treatment for survivors of IPV. Yoga has been found to be an effective complementary therapy to psychotherapy for trauma survivors as it appears to “help survivors learn to regulate affective arousal by raising awareness of internal states and reorganizing physiological responses connected to symptoms” (Emerson, 2015, p. xix). This chapter discusses my position on the need to go beyond talk therapy for individuals that have experienced IPV. Specifically, ways of applying aspects of Kundalini yoga therapeutically are proposed for helping to heal the trauma of IPV.

My personal experience of IPV and Kundalini yoga informs this discussion. Although my experience with practicing Kundalini yoga is limited, it has led me to explore this form of yoga in potentially healing the trauma from IPV. This chapter includes documentation of my experience of doing the Kundalini yoga sets utilized in the

2016 research study along with the PTSD protocol, and I present my thoughts on using these meditation and movement sets as an adjunctive therapy.

### **Intimate Partner Violence, PTSD and Complex Trauma, and Dissociation**

IPV has been found to have a long-lasting negative impact on the survivor and oftentimes leads to symptoms of PTSD (Evans, 2007, p. 6). This abuse may be chronic and repetitive in nature. Due to the chronic experience of IPV, survivors are also susceptible to complex trauma, which commonly includes experiencing symptoms of dissociation and affect dysregulation (Emerson & Hopper, 2011, p. 16).

“Dissociation is the essence of trauma” (van der Kolk, 2014, p. 66). In a discussion about dissociation and trauma, analytical psychologist Carl G. Jung was in agreement with van der Kolk’s statement, and he claimed that psychological dissociation was “the critical issue in posttraumatic stress” (van der Kolk, McFarlane, & Weisaeth, 1996, p. 313). In particular, due to the nature of the repetitive abuse along with researchers’ conclusions that those who experience HBTs are more prone to dissociate (Martin et al., 2013; Platt & Freyd, 2015; Rand & Saltzman, 2003), it would seem that IPV survivors are highly susceptible to experiencing this symptom. Although trauma survivors may present an array of symptoms that impact the ANS, they seem to be more prone to experience underarousal symptoms such as dissociation (Levine, 2010, p. 102).

Along with dissociation, trauma survivors may also have issues with communication, which provides more evidence that there is a need to explore modalities outside of traditional talk therapy. Levine’s (2010) SE® approach addresses trauma and the body, in particular, with ways to discharge trauma stored in the body. Integrating the



body in therapy allows for the movement “out of mobility, into sympathetic arousal, through mobilization, into discharge of activation and then finally onward to equilibrium, embodiment and social engagement” (p. 115). He stressed the importance of bringing clients’ awareness to body sensations in order to help them move out of states of dissociation (p. 115).

### **Polyvagal Theory and Stimulating the Vagus Nerve**

The vagus nerve appears to be a vital component in regulating the nervous system and reducing symptoms of PTSD. A unique feature of this large nerve is that it has both sensory and motor components, which means that bidirectional information moving between the body and the mind (Shorter, 2014, p. 14). This bridge between the mind and body allows for emotions and thoughts to influence the body and the body to influence the emotions and thoughts (p. 14). Impairment of the vagus nerve has been found to be associated with PTSD as well as other disorders including depression, anxiety, and panic disorders (Huguenard, 2013, para. 2); therefore, finding ways to heal and foster a healthy vagus nerve is crucial for restoring balance back into the lives of those impacted by trauma.

Around 80% of the vagus nerve fibers run from the body into the brain, and stimulation via breathing, chanting, and movement can directly affect the body’s arousal system (van der Kolk, 2014, p. 209). Although there are multiple ways to stimulate the vagus nerve, this chapter focuses on breath, chanting, and movement, because all of these are elements of Kundalini yoga. Controlling the breath has the ability to influence heart rate and blood pressure positively (Shorter, 2014, p. 15). Shorter (2014) noted that chanting and singing have been found to increase heart rate variability (HRV) and that

doing this in groups also increases vagal tone. The vagus nerve can be stimulated via stretching the body, in particular, with postures that open the chest, such as backbends (p. 15). Stimulating the vagus nerve via movement is possible due to internal organs being connected by branches of the vagus nerve, and “anything that moves these organs in relation to one another also stimulates the vagus nerves” (p. 15).

### **Yoga, Kundalini Yoga, and Trauma-Sensitive Yoga**

Yoga has been found to be useful in helping women “calm down and get in touch with their dissociated bodies” (van der Kolk, 2014, p. 88). One important element of using yoga as a healing modality for IPV survivors is using a trauma-sensitive approach. Creating a safe space for exploration of body sensations along with allowing choice in whether or not clients want to participate in a particular aspect of the yoga set can empower them to make decisions on what feels right for their bodies and minds. This approach is especially important for this particular population, as they may have experienced the feeling of lack of control over their lives or bodies while in an abusive relationship and through their trauma.

In considering Kundalini yoga specifically as the yoga modality for IPV survivors, it is important to note that limited research has been conducted on this type of yoga for use in treating PTSD. Although the two studies found in the research of the literature (Jindani & Khalsa, 2015; Jindani, Turner, & Khalsa, 2015) did show a reduction in symptoms of PTSD, the studies’ limitations included a failure to use a control group and a lack of long-term follow-up with the participants. Further research is needed to determine if this form of yoga can in fact be a useful, long-term complementary therapy to psychotherapy to treat those with PTSD.

The Kundalini yoga PTSD-specific protocol presented in Shannahoff-Khalsa's (2012) *Sacred Therapies* is claimed to be a viable treatment option for those who have experienced trauma; however, no clinical trials have been conducted to verify the efficacy of this specific protocol. Although Shannahoff-Khalsa's book provided no descriptions of why these specific techniques work with reducing symptoms of PTSD, in the video presenting the protocol, Shannahoff-Khalsa (2014) claimed that one of the techniques he was demonstrating was specifically simulating the vagus nerve.

The obsessive-compulsive disorder (OCD) protocol Shannahoff-Khalsa (2004) presented in his book was used in two published clinical trials with reported success in reducing symptoms of OCD (p. 93). This protocol is the only one of those he presented that has been used in clinical trials. Shannahoff-Khalsa reported that protocols for other psychiatric disorders have been used successfully by yogis for thousands of years and that he has anecdotal evidence of their efficacy (p. 92). Scientific evidence is needed to support his claims.

### **Yoga as an Adjunctive Therapy**

Yoga practice typically includes a movement-based practice, breathing exercises, and sometimes meditation and chanting. Several researchers have found that deep breathing and chanting affect the vagus nerve and the PNS (Bernardi et al., 2001; Pal et al., 2004; Telles, Nagarathna, & Nagendra, 1995). Scientific evidence regarding the therapeutic value of yoga is increasing incrementally.

A team of researchers from Boston University School of Medicine, New York Medical College, and Columbia University conducted research to determine the validity

of their hypothesis that yoga reduces allostatic load, partly due to stimulation of the vagus nerve. In their report, they state,

Controlled studies have demonstrated that yoga practices decreased symptoms in PTSD, Obsessive Compulsive Disorder, Generalized Anxiety Disorder, Panic Disorder, and anxiety after natural disasters . . . . For example, a controlled study of 183 survivors of the 2004 Southeast Asia tsunami found that within one week, an eight-hour yoga breathing intervention resulted in a 60% decline in scores on the Post-traumatic Stress Disorders Checklist (PCL-17) and a 90% drop in scores on the Beck Depression Inventory (BDI). These improvements were sustained at 6-week and 6-month follow-up. (Streeter et al., 2012, p. 6)

Results of the study showed that “interventions such as VNS [vagus nerve stimulation] and yoga, which increase PNS and GABA [the neurotransmitter *gamma-amino butyric acid*] activity, may be effective in treatment of resistant subjects who failed to respond to pharmacologic agents that increase activity in the GABA system” (Streeter et al., 2012, p. 7).

Yoga and meditation have become a popular in Western culture as a way to regulate the nervous system and bring a sense of well-being. Yoga has been found to produce physical and emotional changes in individuals and has the potential to reduce symptoms of PTSD (Wells, Lang, Schmalzl, Groessl, & Strauss, 2016, p. 60). Both Eastern yoga teachings and Western science on respiratory physiology suggest associations between emotional states and breathing patterns and that, consequently, breath regulation can influence emotion (p. 62).

An important mechanism through which both yogic breath and movement can be hypothesized to impact autonomic regulation is promoting vagal afference. Vagal afference is mediated via the thalamus to brain regions involved in emotion regulation, such as the insula, the anterior cingulate cortex, and the prefrontal cortex (Wells et al., 2016, p. 62).

### **Summary of Research on Kundalini Yoga as an Adjunctive Therapy**

Few studies have examined the relationship between Kundalini yoga and trauma. The two studies mentioned above (Jindani & Khalsa, 2015; Jindani et al., 2015) utilized Kundalini yoga as a complementary therapy for those with PTSD. Along with these studies, Shannahoff-Khalsa has published multiple books on using Kundalini yoga protocols for mental health, including a meditation set for PTSD in his book *Sacred Therapies* (2012).

A study conducted by yoga and trauma researcher, Dr. Farah A. Jindani and Kundalini yoga instructor, G. F. S. Khalsa (2015) utilized an 8-week Kundalini yoga program with 40 participants with PTSD (p. 401). The program included both classes and home practice. This study used Kundalini yoga in a trauma-sensitive manner, where participants were invited to try poses and given modifications (p. 402). The participants in this study were found to experience life changes in the following domains: mind–body relationship, emotional, self-reflection, cognitive, action/behavioral, and psychosocial (p. 405). Jindani and Khalsa noted the importance of group interaction in the yoga classes, as it provided social support for these people with PTSD, who are “generally isolated due to physiological and emotional struggles” (p. 406).

In another study utilizing Kundalini yoga with 80 individuals with PTSD, significant changes were found in the participant’s overall sense of wellbeing (Jindani et al., 2015, p. 6). Four specific yoga sets were used in this study which for 2 weeks each, for a total of 8 weeks (p. 3). Like the study conducted by Jindani and Khalsa (2015), this study also included yoga classes along with home practice. The participants in the yoga

group in this study were found to experience greater positive changes in regard to sleep, positive affect, perceived stress, anxiety, stress, and resilience than those participants in the control group (Jindani et al., 2015, p 5).

These studies concluded that Kundalini yoga may be a beneficial complementary treatment for individuals with PTSD (Jindani & Khalsa, 2015; Jindani et al., 2015). In both studies, participants were shown to make progress in their overall well-being and increased awareness. Both sets of researchers noted a need for research on the long-term impact of the use Kundalini yoga with these participants with PTSD as well as a need for an active control in future studies.

Shannahoff-Khalsa's (2012) eight-part protocol for PTSD was transmitted to him by Yogi Bhanjan in 2004 (p. 3). This protocol includes the process of tuning in along with seven separate meditation techniques. The full protocol takes 1 hour and can be done sitting on the ground or in a chair. The meditations consist of various mudras, mantras, and breathing techniques. The various techniques are claimed to have specific benefits associated with them, including eliminating blocks in the unconscious mind, focusing and clearing the mind, improving health, organizing and normalizing various regions of the brain, stabilizing the activity of the frontal lobes, and awakening creative power within (pp. 70-79).

### **Personal Experience**

In my own healing journey as a survivor of IPV, when I discovered Kundalini yoga, I did not connect doing its practice with helping me reconnect to my body and heal from the trauma of an abusive relationship. In retrospect, I became curious if there was something about Kundalini yoga that helped me process and move on from this trauma. I

had been practicing other forms of yoga as well as going to therapy for 6 years following the end of my relationship. In those 6 years, I continued to feel emotionally stuck, as if I could not fully move on with my life. This condition shifted for me when I began to practice Kundalini yoga. When I reflected on what the differences might be between the practice of Kundalini yoga and the other types of yoga I had practiced, the use of mantras and the specificity of the yoga sets in Kundalini stood out. I intuitively felt that this practice helped me heal from my experience of IPV and was interested in how and why it may have been more helpful to me than other yoga practices in conjunction with talk therapy.

Although I was not currently experiencing symptoms of PTSD, I practiced the Kundalini yoga protocol for PTSD (Shannahoff-Khalsa's, 2012) specifically as part of my research for this thesis. I found that I had much resistance to this particular set due to the length of the time it took and because it was all seated meditation with no movement. The first time I attempted this protocol, I was halfway through when I stopped. I enjoyed the beginning of the meditation but found myself feeling tired after the first half. I personally needed to do the full 8-part protocol with another person to complete it. I experienced some short-term benefits from this practice, including relaxation, a sense of calmness, and a decrease in anxiety, but the protocol in its entirety was a bit long and complicated for me personally. It is not a practice that I felt I would want to do on a regular basis, but I considered incorporating parts of it into my own personal meditation and yoga practice.

The Kundalini sets that were used in the study by Jindani, Dr. Nigel Turner, an Independent Scientist with the Institute for Mental Health Policy Research at Centre for

Addiction and Mental Health, and Sat Bir S. Khalsa, Assistant Professor of Medicine at Harvard Medical School and Director of Research at the Kundalini Research Institute (2015) were each quite different. They utilized a variety of postures, mantras, and breathing techniques. I found some them to be quite challenging, but others were done with ease. I imagine that for individuals who do not have a yoga practice, some of these sets would need to be modified to be attainable.

### **Clinical Applications**

As the research has shown, often, the need arises to go beyond talk therapy to work with individuals who have experienced trauma and particularly for survivors of IPV. Emerson (2015) stated, “Trauma that occurs within the context of relationships is especially devastating to human beings and, because of its multifaceted impacts, requires a broad matrix of healing modalities” (p. 15). I have researched and personally explored the use of incorporating the body into therapy as a way of healing trauma and come to believe in the importance of psychotherapists having knowledge of the various modalities that may serve as adjunctive therapy to support clients, including the use of Kundalini Yoga techniques.

Although Kundalini yoga has the potential to reduce symptoms of PTSD through the practice of movement, mantras, mudras, meditation, and breathwork, I believe that for traumatized clients, it would be necessary to adapt these practices to meet them where they are in their process of dealing with the trauma. It is my opinion that if introduced utilizing a trauma-sensitive yoga (TSY) approach, these techniques may benefit IPV survivors who are experiencing trauma symptoms. Emerson (2015) discussed how to incorporate yoga into the therapy process in his book, *Overcoming Trauma through*



*Yoga: Reclaiming Your Body*. He noted that it is helpful for the therapist have a personal experience with yoga (p. 92). For therapists integrating Kundalini yoga or any other yoga practice into the therapeutic experience, I feel that knowledge of the modality and personal experience doing the techniques they show their clients is key.

### **Trauma-Sensitive Yoga**

It is important for the therapist to be sensitive to the impact of trauma from IPV on the individual when introducing a physical practice as a treatment modality. TSY focuses on providing safety, an invitation to try poses, customized modifications of the techniques, nonjudgment, and mind–body awareness (Jindani & Khalsa, 2015, p. 402). TSY also focuses on the concept of interoception, or awareness of what is occurring within the body, which is a critical part of the healing process proposed by Levine (Emerson, 2015, p. 44). In a TSY practice, there is always an option to stop doing yoga at any time, as a basic principle of this practice is allowing individuals to discover what they are comfortable doing, along with having the support of the instructor (Emerson, 2015, p. 9).

## **Chapter IV**

### **Summary and Conclusions**

#### **Summary**

Chapter I introduced the topic of intimate partner violence (IPV) and Kundalini yoga. My interest in this topic was briefly stated along with a rationale for the importance of exploring healing modalities that include the body for therapeutic treatment of those who have experienced trauma.

Chapter II provided reviewed of literature related to the research topic. IPV was defined as statistics regarding its prevalence among women were presented. The symptoms of PTSD and complex trauma that are commonly experienced by survivors of IPV were delineated. The review of literature provided further exploration of physiological responses to stress and, in particular, the symptom of dissociation that often arises in those who have experienced trauma. In terms of neurological responses, both the underarousal and overarousal symptoms associated with PTSD were described. Porges's (2011) Polyvagal Theory was reviewed with focus on the role of the vagus in regulating the autonomic nervous system and how it may be stimulated.

The review of literature then turned to the use of the body in therapy and how it may help facilitate healing. In this context, the use of yoga as a healing modality was explored, including the principles of TSY. Specific attention was focused on Kundalini yoga and the background and specific aspects of this practice. A review of clinical studies

conducted on Kundalini yoga included a protocol for PTSD used with participants (Jindani & Khalsa, 2015; Jindani et al., 2015; Shannahoff-Khalsa, 2012).

Chapter III presented the findings of the research, based on my personal experience with IPV and Kundalini yoga. My attempt at practicing the Kundalini yoga protocol for PTSD along with the yoga sets offered in one of the reviewed studies on Kundalini yoga and PTSD was documented. My initial thoughts on the therapeutic application of Kundalini yoga in a clinical setting were expressed.

### **Conclusions**

**Clinical implications.** With the increase in research regarding the neuropsychological impact trauma, today's psychotherapists could benefit themselves and their clients by becoming aware of treatment modalities that address the mind-body connection. The research in this thesis indicates that knowledge of various body-centered modalities is of the utmost importance when working with clients who have experienced trauma from IPA. When integrating the body into treatment, the principles of TSY ensure that the client may have choice, become empowered, gain awareness of body sensations, and be in a safe container. It is the responsibility of the therapist to create this safe space for clients to process their trauma.

After my exploration of Kundalini yoga, I believe that this type of yoga has the ability to be helpful to some clients but may not appropriate for others when used as an adjunctive therapeutic modality for survivors of IPV. The use of Kundalini yoga movement, breathing techniques, and mantras has the potential to help individuals with PTSD, if they are open to this particular modality. This conclusion, however, has led me

to value the importance of exploring a range of body-centered practices so as to have an array of options to recommend to clients and discover what may best serve their needs.

**Suggestions for future research.** Research on the efficacy of Kundalini yoga as a healing modality for PTSD is limited. Although Shannahoff-Khalsa (2012) published a handbook on Kundalini yoga protocols for mental health conditions, little clinical research support his claims of their efficacy. Studies conducted on the use of TSY modality with IPV survivors in both group and individual settings could expand awareness of the benefits and limitations of this application. Such studies could investigate if having the support of others would be more beneficial to this population than practicing alone or just with an instructor. This knowledge would help inform recommendations for IPV survivors to help support their healing process.

Along with more clinical studies on the topic, I suggest further research regarding which aspects of Kundalini yoga may be beneficial for those in various states of arousal. In considering the techniques used in Kundalini yoga, it would be beneficial to identify those that are the most appropriate for hyperarousal symptoms and those most appropriate for underarousal and dissociation.

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