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# Using Dance/ Body Movement Therapy with a Trauma Population

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Using Dance/ Body Movement Therapy with a Trauma Population

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### Abstract

This literature review reveals how the inclusion of a body based, dance/movement therapy treatment to a trauma exposed population can unveil and help integrate underlying patterns of dysregulation, dissociation, attachment, and stored body sensations. It describes highlights of a clinical application combining movement observation and therapy with knowledge of neurological and somatic symptomology within the individual with post-traumatic symptoms. Methods addressed included, traditional cognitive based therapies (top-down), and body-based therapies (bottom-up) focusing on dance/movement therapy. It is concluded that further implementation, research, and knowledge in the field of Dance/Movement therapy is needed.

*Keywords:* trauma; PTSD; movement; dance/movement therapy; complex trauma; somatic psychology; dissociation, ANS

## Using Dance/ Body Movement Therapy with a Trauma Population

### **Introduction**

A traumatic event can happen fast in the flash of an eye, like a car crash or loss of a loved one. The effects are lasting, the feeling of loss or terror may be as vivid years later, held in the unconscious workings of the mind, body and spirit. However, a traumatic experience, such as domestic violence or neglect, may go on for years and yet, when asked the memory of events may be difficult to recall. Events like the loss of a loved one, domestic violence, abuse, neglect, a car accident, or even a breakup can be traumatizing to an individual who feels a real or perceived threat to the safety of one self. The current research reveals that the detection of such threats is incubated in the deep structures of the brain and stored unbeknown, unconsciously, within the body. Many people are left with fragmented memories of their traumatic experiences, a host of easily reactivated responses and baffling, intense, nonverbal memory-sensorimotor reactions and symptoms such as flashbacks, nightmares, hyperarousal, agitation, aggressive outburst, withdrawal, etc (Ogden et al., 2006). These reactions “tell the story” without words, as though the body knows what they do not know consciously/cognitively (Ogden et al., 2006, p.3).

It is the aim of this paper to offer evidence that supports the need for Dance/ Movement therapy (D/MT) in the treatment of trauma to provide changes in sensorimotor experience, that support self-regulation, memory processing, and success in daily life for persons who have experienced trauma (Ogden et al., 2006, p.167). Within the process of this literature review, articles will be discussed as they explore the debilitating and repetitive cycles within the mind and body experience in traumatized individuals (Chaiklin & Wengrower, 2009; Colace, 2017; Devereaux, 2017; Dieterich-Hartwell, 2017; Shafir, 2015; Van der Kolk, 2014; Van der Kolk, 2005). The experience of a traumatic event impacts neurological processing and resides in the

body through repetitive patterns that continuously replay the traumatic event as if it was on a loop (Scaer, 2007). Traditionally the use of “top-down” therapeutic interventions that depend on verbal communication first, and body information processing second, are utilized with persons suffering from these effects (Van der Kolk, 2014; Porges, 2011). With their memory impaired, trying to recall the event is often not possible and ill-advised (Ogden et al., 2005, p.71). Art, music, drama, and dance act as a translator to the speechlessness that comes with terror and fragmented memories. The literature reveals that dance/movement therapy aims to establish safety and reconnect the client with their body to identify patterns and conditioned responses (Bentzen 2015; Chaiklin & Wengrower, 2009; Colace, 2017; Devereaux, 2017; Dieterich-Hartwell, 2017; Leseho & Maxwell, 2010; Levy, 1995; Shafir, 2015). The dance therapist is trained to utilize kinesthetic empathy, attunement, and mindfulness (being in the here and now) while maintaining client’s boundaries during the process. This offers a direct reflection of the client’s internal response in a non-threatening indirect manner.

D/MT can be used as a “bottom-up” therapeutic processing, Utilizing the connection between the mind and body to work together as one exchanging a flow of information and process in a bidirectional circuit to regulate the internal systems of the individual (Rosoff, 2018). Focusing on the body of client and therapist in D/MT can produce a change in the client’s unconscious body response, as well as responses in conscious cognitive processes (Leseho & Maxwell, 2010; Shafir, 2015). If the body is constantly replaying what the mind has repressed, then new movement patterns can help the mind re-focus and calm the aroused response systems (Porges, 2011, Van der Kolk, 2014; Ogden et al., 2005; Levy, 2005). Increasing the range of movement patterns within the body is a way of introducing new behaviors. Per movement theorists, movement increases the range of action and interaction (Levy, 2005).

Within this paper, the impact of trauma on the brain and body will be discussed. Common trauma related terms are defined for reference in Appendix A. Information will be provided on the traditional therapeutic treatment interventions, typical cognitive-based talk (“top-down”) therapy, and the therapeutic treatment of D/MT (“bottom-up”) that focuses on the body first. Bessel van der Kolk (2014) stated, “it is critical for trauma treatment to engage the entire organism, body, mind, and brain” (p. 53). Articles focused on trauma research, and psychosomatic therapeutic approaches, as well as books from Levy (2005), Herman (1992), Ogden and partners (2006), along with Van der Kolk (2014) support the need for body integrated therapeutic approaches. Potential frameworks and therapeutic approaches in the modality of D/MT focus specifically on engagement of the “entire organism,” and will be addressed throughout this paper.

Unlike traditional “talk” therapists, Dance/ Movement therapists are trained and educated in non-verbal communication. They are equipped to communicate and connect with persons who do not have the vocabulary, or a clear sense of internal processing, to communicate why or how they respond and feel the way they do. D/MT provides clarity and terminology to clients in a manner that is conducted through a trauma informed lens. The three pillars of trauma informed care of Safety, Connection, and Emotion regulation are utilized so not to “re-traumatize” the client or elicit a “re-lived” response (terms to be defined below) (Van de Kolk, 2014). It is the goal of this review to provide the reader with information on trauma in addition the need and benefited use of Dance/ Movement therapy with an individual or group whom has experienced trauma.

The literature below will define and explore the deeper complexities of trauma. How the body responds and stores traumatic memories is discussed, as well as the rapid response of the

brain and nervous system. Different approaches to treatment are described, as they focus on cognitive or body first processing. Lastly Dance/Movement therapy is explained and explored as a trauma treatment.

## **Literature Review**

### **What is “Trauma”?**

Van der Kolk (2014) noted “trauma is not just an event that took place sometime in the past; it is also the imprint left by that experience on the mind, brain, and body” (p.21). Everyone is susceptible to trauma and each situation is unique. One’s experience of trauma may result from incidents, events, interactions, either single episode or chronic (Duros and Crowley, 2014). Single experiences are like that of a car accident, rape, or natural disaster. Prolonged experiences of trauma extend over a period as seen in times of war, ongoing domestic violence in adulthood, or emotional abuse. Whereas, complex or developmental trauma is referred to children and adults with severe and prolonged exposure to childhood interpersonal trauma (Herman, 1992). Traumatic exposure can also be “secondary” where the person is witnessing a traumatic experience happen to another. Duros and Crowley (2014) define trauma as:

Occurrences, that cause the system to be overwhelmed and result in nervous system dysregulation. More simply, it is what happens to a person when there is either too much too soon, too much for too long, or not enough for too long (neglect) (p. 238).

Prolonged stress, however similar, is any negative stimulus that produces the persistent activation of the nervous system and related pathways (Herman, 1992). Psychological distress following exposure to a traumatic or stressful event is quite variable. Some symptoms can be constructed within anxiety or fear-based descriptions, while other exhibit externalizing anger with aggressive symptoms, or dissociative symptoms (American Psychiatric Association, 2013, p.265).

Neurophysiological effects of trauma will often occur and result in intrusive symptoms, avoidant behavior of related stimuli, negative alterations in thoughts and mood, and noticeable changes in arousal and reactivity lasting longer than a month. These symptoms are the diagnostic of post-traumatic stress disorder (American Psychiatric Association, 2013). PTSD arises when there is an element of lack of control or helplessness associated with the stress (Scaer, 2007; Foa & Rothbaum, 1998; Van der Kolk, 2014). The automatic nervous system (ANS) is the primary response in a life-threatening situation and will be discussed in more detail later in this paper (Devereaux, 2017).

According to polyvagal theory (Porges, 2011), when faced with a life-threatening perception, ventral vagal tone is lost, inhibiting the social engagement system and supporting the fight and flight responses. Vagal tone refers to the activity of the vagus nerve, a nerve located in the brain that is connected to the heart, lungs and intestines. When vagal tone is high the parasympathetic response system acts to slow the heartrate and breathing down, allowing for the body to freeze in life threatening situations. When the vagus nerve is constantly signaling to the brain that the body needs to freeze, social engagements become less enjoyable and can resemble the symptoms of depression (Porges, 2011). Neuroception, a bodily function that turns defenses on or off (Porges, 2011) is what indicates that it is safe to relax and be social. Normal arousal

regulation moves in flexible rhythms between active engagement with the world and quiet resting states, activating appropriate stress responses to unexpected or unpleasant events (Bentzen, 2015). When traumatic stress is present and interferes with regulation, the nervous system does not permit vagal tone to return to a relaxed, “safe” state. Such traumatic experiences result with many persons being stuck, like a light switch, either “on” (in a hyperaroused state) or “off” (in a hypoaroused state). When stuck “on,” clients report or display symptoms such as anxiety, panic, a heightened startle response, restlessness, hypervigilance, digestive problems, emotional flooding, chronic pain and hostility/rage (Duros & Crowley, 2014). On the other hand, depression, flat affect, lethargy, disorientation, chronic fatigue, dissociation, low blood pressure, and poor digestion are the types of symptoms which plague clients who are stuck in the “off” position (Duros & Crowley, 2014). Social interaction is impacted by these mobile or immobile states (Devereaux, 2017). To be social and engaged with others, the defense systems need to be inhibited. When neuroception is “faulty,” due to traumatic stress, the detection of risk is present when there is no risk, inhibiting the defense systems from “turning down” (Devereaux, 2017; Porges, 2011). This may become so complete that the trauma victim becomes a hermit, detaching from all social interaction (Scaer, 2007, p.80). This is debilitating to a client’s healing process, as human connection is key in mediating the overwhelmed nervous system impacted by trauma (Rosoff, 2018, Porges, 2011).

Dance/Movement therapy works to repair the trauma survivors internal processing by reconnecting the lost mind-body connection. The repair occurs while engaging the client in non-threatening social interactions, providing space for the individual to “rewire” their defensive system response (Bentzen, 2015; Shafir, 2015). Expanding the movement repertoire of the client expands the range of emotions that the client expresses in a healthy manner. As seen in trauma

survivors, the traumatic event can lead to a avoidance of movements as the stored memory remains in the body (Scaer, 2007). Embodiment implies revitalizing the body, reestablishing the enactive sensoriperceptive connection and recovering the possibility of accessing the emotional wealth present in the unfolding of life (Chaiklin & Wengrower, 2009). Embodiment is utilized in dance/movement therapy to repair the impact of trauma on the body/mind connection.

### **Trauma Impacts the Body**

When working with trauma survivors, attention is rightfully paid to the psychological torment that clients often feel. However, because trauma is something that happens deep in the core of one's brain and body, the physiological consequences must be attended too as well (Van der Kolk, 2014). Physiological consequences of traumatic events can take the form of a variety of cognitive and physical ailments, as conditions may be experienced in the body, but not integrated in the brain (Rosoff, 2018). It is not forgotten, but is instead unconnected to one's conscious awareness (Rosoff, 2018). Cognitive ailments of traumatic events can lead to anxiety, depression, dissociation, and stress that once acted as a defense to threat, but continue to act after the threat has been removed, becoming dysfunctional responses in everyday life. These defense responses may become powerful body held tensions leading to symptomology within the body which have no known medical reasoning such as chronic pain without prior injury or vague numbness of a limb that occurs in the body without reason (Scaer, 2007; Van der Kolk, 2014).

These occurrences of numbness and pain have been described as a common dissociative phenomenon (Scaer, 2007). Dissociation is a term to describe mental states characterized by a disruption of conscious awareness (American Psychiatric Association, 2013). Dissociation and dissociative states create a disconnect between the conscious brain and body, environment, or self. Dissociative tendencies manifest in the victim's awareness of their bodies. When describing the pain, "numbness" is often used as a descriptor, yet the exact sensation is usually very difficult

to describe (Scaer, 2007, p.83). Current research in movement related practices such as yoga and body based somatic therapy with war veterans and female trauma survivors, have worked to reconnect the survivor to their body creating a greater sense of self-efficacy and self-regulation (Martin et al., 2015; Pierce et al., 2007). This research identified and supported the notion that trauma survivors react and respond to their world not just cognitively, but through bodily felt sensations. These sensations can be alarming and intrusive when brought to the conscious awareness. While the mind dissociates from the body, the body continues to react as if it is under siege (Duros & Crowley, 2014; Scaer, 2007). Scaer (2007) explained research findings on physiological symptoms in his book "*The Body Bears the Burden*". He explained:

In our chronic pain program, we invariably noticed that the patient's unconscious posture reflected not only the pain, but also the experience of the traumatic event that produced the pain. The asymmetrical postural patterns, held in procedural memory, almost always reflect the body's attempt to move away from the injury or threat that caused the injury. Many of these patients manifested the "non-physiological findings" that have branded them as chronic pain patients by their physicians (p.84). With careful exploration of the mechanisms of the source of the pain, however, one will usually find strong evidence for a history of traumatic stress specific to that area of the body. Specific neuromuscular postural patterns that have developed related to their injury are often visible markers for the presence of somatic dissociation, and explain the patterns of "non-physiological findings (p.84-85).

Putting it simply, the body stores the need to flee the traumatic experience. The carried tensions, flow, and stiffness are held by the body in a way that tells of the event that the survivor may not be able to vocalize.

### **Neurological Response to Trauma**

As the body stores the physical residual effects of trauma, the internal cognitive process by which the human species responds to threat also holds unconscious patterns that are quick to play out when similar stimuli to the traumatic event is present (Dieterich-Hartwell, 2017). As the initial response to threat activates the automatic response systems only part of the information is stored consciously and the remainder information arises in the form of intense emotional responses, such as overcoming sense of fear, anger, or sadness.

The right side of the brain handles the brains acute response to threat. The brain receives information from the senses and various organs. The information is then sent to the thalamus, a cluster of cells in the middle of the brain that form a relay station for messages to and from the body and brain (Scaer, 2007, p.10).

Varied information including sight, smell, taste, hearing, or kinesthetic (movement-based) and pain sensations are sent from body to brain. This information is routed by the thalamus to the area of the cerebral cortex that involves perceiving sensations and initiating movement. It is also sent from the thalamus to the limbic system (the emotional brain), particularly the amygdala, the center for memory as it pertains to arousal (Scaer, 2007, p.10).

Within the brain, the amygdala controls memory and most of our emotional response systems. When a threat is detected the amygdala sends a signal to the hippocampus (Scaer, 2007). The hippocampus stores and retrieves memory. This begins the cognitive and conscious threat based information formation (Scaer, 2007; Duros & Crowley, 2007). Once this information is stored, it goes to the right orbitofrontal cortex (OFC) for the purpose to further the information and memory processing (Duros & Crowley, 2007). OFC is known for its ability to organize the complex brain and the body's response to a survival threat. It also judges if the incoming information is significant enough to rev up or tone down involuntary survival behavior

(Scaer, 2007; Duros & Crowley, 2007). An example would be when a child is stung by a wasp. The body sends a message to the thalamus where the sensation is sorted and sent to the cerebral cortex notifying it of the pain and the movement response to swat the wasp. The information sent to the amygdala causes the emotional response that may cause a child to be sad and cry, then the hippocampus stores the memory. The stored memory becomes part of the OFC. When the same child goes outside to play the next week and sees a wasp nest, the OFC revs up the child's response system and informs the child to run away from the wasps. The awareness of the wasps leading to pain, is conscious thought for the child, but what happens when a threat is unconscious?

**The Autonomic Nervous System (ANS).** The complex system is the autonomic nervous system (ANS) come into action when unconscious threat is detected. OFC and ANS exchange and relate to one another. OFC responds to conscious threat, and the ANS is responsible for unconscious threat (Duros & Crowley, 2007; Van der Kolk, 2014; Rosoff, 2018). The amygdala, a structure that operates largely outside of conscious awareness, plays a key role in initiating stress responses. After the initial response to a traumatic situation any situations associated with similar fear, activate the amygdala and triggers the body's fight/flight/freeze response through the autonomic nervous system (Van der Kolk, 2014). Autonomic experiences can be organized in two dimensions: pleasure– displeasure (or comfort–discomfort) in high arousal (sympathetic ANS states) as well as low arousal (parasympathetic ANS) states (Bentzen, 2015). Without them, the later development of limbic emotions such as anger, fear, sadness, playfulness, joy and surprise cannot emerge (Damasio, 1999; Stern et al., 1998). This is the unconscious system of energy storage and expenditure, the “on” “off” switch mentioned earlier (Duros & Crowley, 2007). The “on” switch is the sympathetic nervous system responsible for fight/flight responses.

The parasympathetic nervous system is the “off” part of switch that plays a role in “freezing.” Freezing is rarely the first response of the ANS. Often when fleeing and fighting are not possible, the immobility state of freezing is the next instinctual option (Scaer, 2007, Dietrich-Hartwell, 2017). Traumatic situations when a person is pinned under weight, held down, or restrained will elicit this response (Scaer, 2007; Van der Kolk, 2014; Duros & Crowley, 2007; Herman, 1992; Dieterich-Hartwell, 2017).

The Parasympathetic nervous system (PNS) is also what comes into action to regulate a person after the initial threat, aiding in their return to a neutral baseline (Devereaux, 2017; Porges, 2011). When the parasympathetic system cannot complete the regulation return, (as seen in complex trauma with children in unsafe environments) the PNS is stuck and the individual develops a predisposition of a hypoaroused state of being (Rosoff, 2018). The bidirectional signaling of information between the body and brain turns “off” as the PNS attempts to provide internal safety (Scaer, 2007; Rosoff, 2018). This disconnection is common in traumatized individuals and operates as a defense of the body, the resulting condition is termed dissociation (Van der kolk, 2014; Chaiklin & Wengrower, 2009; Rosoff, 2018).

**Dissociation and alexithymia.** Dissociation operates on a spectrum (Rosoff, 2018). On one side of the spectrum, it is a response described as feeling nonexistent; on the other end of the spectrum it is a response described as a complete black out, or amnesia, unable to recall in conscious awareness, any part of the event (Chaiklin & Wengrower, 2009; Briere & Conte, 1993). Some traumatized individuals report an out of body, witnessing experience, accompanying a complete shutdown/numbing of all physical and emotional responses when dissociating (Chaiklin & Wengrower, 2009; Scaer, 2007; Herman, 1992; Van der Kolk, 2014). Chaiklin and Wengrower (2009) described dissociation as an abandoning of the body to avoid

feeling pain, and denying the experience. It is a disconnection from oneself and emotions. Dissociation serves as a way to escape within a person from fear to their environment (Scaer, 2007). Later in life, when the fear or fearful environment is no longer present, the dissociated person may experience altered perceptions of bodily sensations, time, reality, and depersonalization (Scaer, 2007). More profound clinical states include symptoms of conversion hysteria, fugue states (reversible amnesia for personal identity/blackout), and multiple personality disorder (Scaer, 2007, p.76).

Similarly, the body may detach from the mind hindering the ability to recall and identify emotions, physical sensations, and muscle activation within the client, in a distortion called alexithymia (Taylor, Bagby, & Parker, 1997, Van der Kolk, 2005). As stated earlier, the thalamus communicates motor and sensory signals to the cerebral cortex. During the original trauma and reoccurring flashbacks thereafter, this connection breaks down, allowing for only bits and pieces, images, sounds, and physical sensations to be recalled rather than the whole story of event (Van der Kolk, 2014). Alexithymia results in this breakup of the mind-body connection. Ogden et al., (2006) described the explosive and intense symptomology of alexithymia in persons who have experienced trauma:

“They may be detached from their emotions or their emotions may be experienced as urgent and immediate calls to action; the capacity to reflect on an emotion, and allow it to be part of the data that guides action, is lost, and its expression becomes explosive and uncontrolled. Through nonverbal remembering triggered by reminders of the event, traumatized individuals relive the emotional tenor of previous traumatic experiences, finding themselves at the mercy of intense trauma-related emotions. Emotional arousal in an individual with unresolved trauma thus often provokes action that is not an adaptive

response to the present (non-traumatic) environment, but is more likely a version of an adaptive response to the original trauma.” (Odgen et. al., 2006, p.11)

Both alexithymia and dissociation ward off overwhelming affective states in traumatized clients at the time of original threat. Dissociation appears on a spectrum and relates a person to the environment, as alexithymia operates solely within the individual, and can be an accompanying symptom of the dissociation spectrum (Taylor, Bagby, & Parker, 1997; Rosoff, 2018; Scaer, 2007).

An example of this is found in Briere and Conte’s (1993) study on memory amnesia of adults molested as children. Briere and Conte found the ability to recall traumatic experiences in adulthood, which took place as a child, were grossly distorted or recalled with vague remembrance. This lack of remembrance is stated as a survival tactic that is a result of the victim’s ability to unconsciously dissociate oneself from the experience (Briere & Conte, 1993). Briere and Conte also found that “dissociative symptoms in trauma also affect attention, cognition, and emotional intensity, mainly by construction, withdrawal, and detachment” (1993, p.80). Mood, affect, and range of emotion may be blunted and flattened with dissociation. Consequently, while “fear and panic may be dulled, feelings of joy, pleasure, and satisfaction may be muted” as both operate in the pleasure-displeasure systems of the brain (ANS) (Briere & Conte, 1993, p. 80; Damasio, 1999; Stern et al., 1998).

Therapeutic interventions offer ways in which feelings and emotions can be expressed safely, addressing the areas of dissociation and trauma that lead to flat affect, social isolation, arousal dysregulation and depersonalization. Therapies with a focus on cognitive therapeutic interventions (Top-down), as well as therapies with a focus on body-based therapeutic interventions (bottom-up) provide relief to a client suffering from the above symptoms.

## **Therapeutic Options**

### **Top-Down Approach**

Top-down therapeutic models focus treatment on the cognitive and emotional responses of clients. The client works to identify links between thoughts and emerging emotions. The assumption of this approach is that the mind leads to the physical or embodied experience of the client (Ogden et al., 2005). Top-down treatment uses language and internal narratives (thoughts) to rework, reframe or reorganize the mind. Reframing the narrative regulates affect and sensorimotor experiences, focusing on meaning making and understanding of responses (Ogden et al., 2006, p.166). Through the therapeutic relationship, connections to painful past experiences are addressed, bringing awareness to the distorted thoughts and emotions that impact everyday life for trauma survivors. This awareness brings about change in the belief and sense of self, thereby creating a relief of suffering and improvement of well-being (Ogden et al., 2005).

Internal narratives commonly worked on in the trauma population contain negative self-bias or self-doubt, the belief that the world is a dangerous place, and the belief that one is incompetent or helpless in the face of trauma and posttraumatic symptoms (Foa & Rothbaum, 1998). The effect of negative self-perception leads to lower performance outcomes, when there is no sign of evidential impairment (Samuel et al. 2016). Such negative cognitions create harmful coping strategies that make PTSD worse, leading to the onset or exaggeration of symptoms such as depression, lower levels of mastery, and guilt related suicidal idealization (Foa & Rothbaum, 1998; Ehlers & Clark, 2000; Samuelson et al., 2017). According to Bandura, the “most influential way to build self-efficacy is through mastery experiences, which involve the acquisition of cognitive, behavioral, and self-regulatory skills to manage life experiences” (as cited in Samuelson et al., 2017, p. 542). For survivors to thrive and heal in top-down therapy, the need for reframing negative cognition is dependent upon the survivor’s ability to identify their

thoughts and self-schemas, while taking an active role in treatment (Colace, 2017). For example: exclusively thinking about terrible things happening leads to only noticing when terrible things happen, causing a reinforcement in this negative cognition. The continued distorted thought “only terrible things will happen” creates a hyperawareness of things going wrong. Through the therapeutic relationship, the therapist works with the client to identify the distorted thought and break the cycle of negative cognition. The client changes and reduces the tendency to hyper-focus on everything that could go wrong, therefore broadening the possibility of positive outcomes. Instead of noticing only what did not work, the client is able to notice aspects of a situation that succeeded, as well as areas for further growth.

Benefits of top-down approaches include the targeting and adhering of the client’s beliefs and exploration into the different aspects of their personality, role and vocalization of self. As an adult, top-down treatments are beneficial, as much adult activity is based upon top-down processing. Schore (1994, p. 139) noted that, in adults, “higher cortical areas” act as a “control center,” and that orbital cortex dominates subcortical activity. This means, that for most adults they can notice emotional and sensorimotor responses without being hijacked by them.

However, for the traumatized individual, the intensity of trauma-related emotions and sensorimotor reactions adds challenges to processing information top-down. The client’s inability to control their reactions creates a preconceived sense of threat and sensitivity to stimuli. This sensitivity hinders their ability to communicate effectively and process further information, the primary task required in top-down therapies, yielding inaccessible areas of the brain during treatment of the traumatized individual (Odgen et. al, 2006; Scaer, 2007). Inaccessible information may prolong a therapeutic breakthrough and slow down individual healing, as top-down therapies tend to utilize interventions that only focus on left-brain functions

(Ogden et al., 2006). Unlike top-down therapies, trauma does not impair or alter only one side of the brain, trauma impairs both left and right brain functions (Van der kolk, 2014). Interventions focusing on healing both left and right brain functions, can be found in bottom-up approaches such as dance/movement therapy which utilize movement and creative expression (Duros & Crowley, 2014).

### **Bottom-up Approach**

Ogden, Minton, and Pain (2006) defined bottom-up therapeutic approaches as, therapy that utilize body sensations and movement as entry points to understanding client experiences. Bottom-up approaches create changes in sensorimotor skill to support self-regulation, memory processing, and success in daily life. These new experiences create an opportunity for the client to reorient and redirect attention in an effort to become “unstuck” from particular stimuli, and concentrated on the present moment response (Ogden et al., 2006, p.74).

An important aspect of bottom-up approaches is how they tend to parallel the natural developmental sequence of a person (Buk, 2009). As a person enters the environment outside the womb, they rely on their ability to mirror and imitate what is around it in order to develop properly (Van der Kolk, 2015; Perry 2005; Buk, 2009). Bottom-up therapies utilizing the synchronization and attunement, when working with a client, to repair adverse developmental experiences like abuse or neglect (Buk, 2009). Once Meltzoff and Moore (1977) documented in their work that infants as young as 12 days will spontaneously reproduce specific facial expressions made by adults, and will refine their attempts to do so with progressively accurate results over the course of several minutes. The key factor in this finding was that the infants did not rely on anything other than their own memory (Meltzoff & Moore, 1977). In bottom-up therapeutic relationship, a client can mirror the therapist and reproduce expressions forming new

connections, reorganize, and adaption in response to different experiences, this process is termed neuroplasticity (Perry, 2005). Adverse developmental experiences, such as abuse, neglect, or trauma trigger irregular organization and function of crucial neural structures and cause mental and physical responses such as physiological hyperarousal and dissociation (Perry, 2005; Ungar & Perry, 2007; as cited in Dieterich-Hartwell, 2017). By expanding habitual movements bottom-up therapies create new neural pathways within the brain (Dieterich-Hartwell, 2017). Habitual movements are the unconscious ways a client carries their body, such as the way they walk, sit, talk with their hands, or fidget their fingers. Mirroring, is a way body-based movement therapist expand the habitual movements of a client.

Bottom-up approaches allow the body to speak non-verbally and heal from the trauma, in combination to the traditional cognitive aspects. When communicating the depth of one's experiences, verbal dialogue alone may lead to an intellectual understanding without the added physical and emotional connection associated with sparking genuine and long-lasting change (Zerbe as cited in Levy, 2005). Creative dance and movement is one example of an added physical and emotional connection and is one example of how Dance/Movement therapy can foster a healing experience for a client.

### **What is D/MT? How does it work?**

Dance/Movement Therapy(D/MT) is defined by the American Dance Therapy Association (ADTA) as,

The psychotherapeutic use of movement to promote emotional, social, cognitive, and physical integration of the individual, for the purpose of improving health and well-being. D/MT began to emerge in the 1940's. Many of the pioneers of dance/movement therapy were accomplished dancers who sought self-expression, and psychotherapeutic movement through the movement of their bodies. D/MT is a "bottom-up" therapeutic

approach that utilizes body-based therapeutic interventions before cognitive processing.

Dance/ Movement therapy relies on the premise that movement is a tool for assessment, movement serves as means for communication, and that the mind, body, and spirit are interconnected (American Dance Therapy Association, 2016, para.1).

Dance/Movement therapist have a unique set of tools, which, when used skillfully and empathically, help to reach deeply into the complex web of the human personality (Levy, 1995, p. 10). Some of these tools are 1) kinesthetic empathy, 2) attunement through mirroring, 3) facilitating “here and now” moments, while 4) utilizing a body based developmental lens. By the same token, used carelessly or without a genuine understanding and empathy for the multileveled needs of the individual, the same tools can create further fragmentation and chaos (Levy, 1995, p. 10). An important aspect of this process involves the therapist’s willingness to maintain awareness of his/her personal preferences and biases. It is the separation of these personal biases that allow the exchange of energy and information between therapist and client while meeting the therapeutic needs of the individual. The ability to withhold personal bias and create empathy for the client on a body level is called kinesthetic empathy (Kleinman, 2014). It is through this exchange that trust is created and empathy is held, as the therapist takes on the role of “space holder”, mirror, facilitator, and witness to the client (Kleinman, 2014). Being aware of the therapist’s own sensations, while acting without bias, guides the therapist as the process is narrated. In this narration words are given to the internal and external experience while clients express, in movement, their surfacing sensation as the process helps the client to identify internal thoughts, and feelings that were previously shrouded from view. Narration acts as a support for the client in developing self-insight, self-awareness and increasing self-knowledge.

Kinesthetic empathy, attunement, synchronization, and being in the “here and now” with a client, are some of the tools that a dance/ movement therapist utilizes in session. These tools can produce a type of co-regulation or working together, that mimics the relationship between infant and caregiver forming healthy nervous system regulation in a traumatized individual, breaking the debilitating pendulum of the “trauma-vertex” (Bentzen, 2015; Stern, 2004; Tronick, 1989; Tronick & Gianino, 1986). Client and therapist working as one (co-regulating) provides safety as the therapist leads the client from aroused states back to baseline (Scaer, 2007). Through this co-regulation, “now moments” are created. Stern (2004) defined a “now moment” as a shared, special moment in “the moving along a process that is unpredictable, sloppy, dynamic and co-created” (p.220). The human nervous system organizes itself through attunements, missed attunements and the repair of those missed attunements to establish a healthy response to feelings of pain or hurt (Tronick, 1989; Tronick & Gianino, 1986). The development of mental flexibility and strength is established this way. Relational trust is also established through the attunement interactions (Tronick, 1989; Tronick & Gianino, 1986). When a traumatic event has disrupted the ability to repair the missed attunement, relational trust is lost. In the therapeutic relationship the therapist aims to repair the moment of missed attunement by creating “now moments” that go from positive affect to negative and back to positive (Bentzen, 2015).

While working with a trauma population, “here and now” moments are skillfully employed through the use of attunement and kinesthetic empathy. Kinesthetic empathy relates to the idea of synchronization (Sander, 1988; Tornick, 1989; Tornick & Gianino, 1986), which is an inborn ability to sync with another person’s physiological and emotional state (Bentzen, 2015). Kinesthetic empathy focuses on the ability to understand another’s lived experience based on an

awareness of one's own felt body sensations that surface while in relationship (Chaiklin & Wengrower, 2009). The kinesthetic empathy of the therapist focuses on the intersubjective experience rooted in the body (Chaiklin & Wengrower, 2009). Both synchronization and kinesthetic empathy gives the therapist the ability to attune to another person's feelings. Affective attunement differs from mirroring in that it is expressed without copying the literal, physical behavior. Affective Attunement allows the client and therapist to interact with a shared feeling and inner experience, which connects them on an emotional level (Stern, 2004). Through this process the therapist can help the client repair their ability to regulate emotions and body sensations, via the introduction of new movements that create a new emotional response (Bentzen, 2015; Chaiklin & Wengrower, 2009; Levy, 2005, Stern, 2004). Simultaneously, the experience enables dance therapists to facilitate self-development in the client, as the connection between the minds of the therapist and client builds, so does the client's perception of self as a whole, mind and body (Chaiklin & Wengrower, 2009; Stern, 2004). Bentzen (2015) noted, "To reach our full personality potential, we need stimulation – we need to be synchronized, mirrored and contained in interactions with other people, as this develops the brain's emotional and personality potential" (p.214). During developmentally sensitive periods, as well as in adulthood, this process can fail to unfold adequately due to traumatic experiences. If this process is interrupted, the individual benefits, from the targeted support of a therapist, to develop his or her emotional structures (Bentzen, 2015).

An example-of the use of kinesthetic empathy, synchronization, attunement, and meeting an individual's needs appears in Bentzen's writing (2015) about the case of "John." John is a 32 year old male who couldn't talk and didn't respond to language. He lived in a residential institution for the intellectually disabled. His parents were dead, and nothing was known about

his early life. Residential staff believed that John suffered from a traumatic history, based on his interactions with other residents and staff. He refused any attempts of physical connection and frequently demonstrated emotional outburst. Bentzen (2015) met him for a single session where she noted the following:

*“I start to walk with him, in step when I can and circling the room. As we walk, I talk, saying simple things about how we are walking here in the room, naming the things that we can see as we pass them and pass them again.*

*After circling the room a few times, John goes to sit at a dining room table. After a moment, I sit down next to him. Although walking together was already a new and potentially scary experience for him, I briefly touch his foot with mine. He gets up and resumes walking; again I walk with him and name the objects we pass. Again he sits down at the table, and this time I put my foot gently on his for a moment before removing it. He gets up and resumes walking. We repeat this four times.*

*Suddenly, John takes hold of my arm and draws me over to a couch in the middle of the room, where he seats us both and briefly leans against me. This was the first time anyone had seen John spontaneously initiate contact.”* (Bentzen, 2015, p. 217)

Synchronization is offered through the therapist’s voice tone and joining in his activity. Kinesthetic empathy is the therapist’s awareness of John’s comfort, or discomfort, based on her own emerging sensations as she explores his movement during their shared process of walking and labeling items in the space. This shared experience creates connection and again provides the therapist with kinesthetic information as she calls attention to, and experiences her perception of John’s world. Her kinesthetic awareness allows her to safely make contact with John using the touch of her foot against his. By joining John, a connection is established, yet the focus is not

directed primarily on the client. The severely agitated autonomic nervous system usually experiences focused attention as a threat (Bentzen, 2015). As was the case of John and other traumatized individuals.

In another example, Shafir (2015) described her movement based therapy with “Ron” (pseudonym). Ron was a 60-year-old survivor of a life-threatening public transportation accident. He had waited two years before seeking help for his symptom management. He was unable to sleep well or recall dreams. His mood swings varied from extended periods of dissociation alternating with sudden, often inexplicable, bouts of rage that negatively impacted his relationships (p.243). Shafir observed Ron’s movement in numerous activities, standing, handling objects, walking, sitting at rest and talking. It was noted by the author that Ron held tensions in his body that gave the appearance that his lower was disconnected from his upper half. It appeared that his pelvis and legs did not efficiently support his torso and upper limbs (Shafir, 2015, p.245-246). During further testing, it revealed in the Adult Attachment Projective Picture System (AAP), a psychological assessment of adult attachment, that Ron’s adult attachment status as unresolved “U”, which identified ‘a prolonged absence of conscious grieving’ (Bowlby, 1980, p. 152; as cited in Shafir, 2015, p.248). Based upon these results, it was safe to assume that Ron experienced an insecure attachment trauma early in life. Shafir’s assessment of his body movement reflected similar results to the AAP psychological evaluation

Movement tools such as Laban movement analysis (LMA) and Kestenberg Movement Profile (KMP) (Levy, 2005), dance therapists like Shafir are skilled in the assessment of internal states through analysis of a client’s body, effort, space, and shape, as well as the developmental rhythms that progress within an individual. LMA is a method for observing, describing, and understanding all types of body movement (Levy, 2005). It provides a language for detailed

analyses of body movement, identification of specific movement attributes, and promotion of effective physical performance of movement characteristics (Levy, 2005). KMP Movement Analysis is the comprehensive system for identifying psychological, developmental, emotional, cognitive and global health/imbalance through movement observation, notation and interpretation (Welcome to Kestenberg, n.d, para. 2). While the information obtained in movement assessments does not give definitive causation of the internal systems, it can act as a guide for treatment planning purposes and for the creation of movement interventions to assist client in meeting their goals (Levy, 2005). Shafir utilized these assessment tools as she successfully worked with Ron from a bottom-up, sensorimotor approach, assessing his progress and introducing new movements to his habitual patterns. Shafir led Ron through movement where he was consciously brought into the “here and now”. Shafir observed how Ron’s use of movement rhythms (KMP) as well as his use of breath brought childhood memories and sensations to consciousness. Working together with Ron, Shafir utilized her kinesthetic empathy and attunement to assist in the repair of his nervous system regulation. She then worked at deescalating his responses to similar stimuli, by slowly introducing props of a bag containing specific items he carried with him at the time of his accident. Ron and Shafir worked together reaching towards and moving away from the objects, identifying his internal responses and emerging sensations of increased heart rate, fear, and memories. Working together Ron and Shafir repaired his ability to connect with others, and integrate the whole body and self into the experience. Ron came to accept his sensations and identify the triggering stimuli as being “just a bag” (Shafir, 2015). In doing so, Ron learned how to identify his fearful responses, and slow his fast-acting nervous system, leading to the repaired mind-body connection (Shafir, 2015). In assessing his own progress, “Ron expressed an awareness of a shift in his emotional response to

the traumatic event as he was able to sleep better and dream. He attested to a newly found sense of strength in the center of his core, which he attributed to being able to feel the full length of both arms and the extension into the scapula.” (p. 249). Shafir’s work using body-based therapy with Ron exemplifies the powerful impact and change that can be done using body based therapy.

In addition to these two case studies is the importance the therapist played in the repair of relationships between the client and their lived experiences. In the case of John, Bentzen created opportunity for the staff of the clinic to interact and engage directly with the client. As for Ron, Shafir helped him connect with his relatives and even take a trip with his girlfriend (something he was unable to do prior to therapy). In both of these research studies, as well as other scientific literature (Buk, 2009; Herman, 1992; Levy, 2005; Ogden et al., 2006; Olson-Morrison, 2017), meeting the client in their appropriate developmental stage and inviting them into a process of exploration and creativity appears to be a key component to building the therapeutic relationship with client and to healing. By bringing awareness to the body in space, awareness to the client’s interaction with other (persons and environment), and leading the client through safe exercises to decrease arousal, dance/movement therapists are skilled at repairing the internal chaos of clients, caused by traumatic experiences (Scaer, 2007). Dance/Movement therapy and dance/movement therapist have the capability to make lasting changes in the lives of traumatized individuals.

### **Conclusion**

Dance/ Movement therapy (D/MT) creates changes in sensorimotor experience that support self-regulation, memory processing, and success in daily life (Ogden et al., 2006, p.167). With information and research discovering the impact of trauma related responses on a body level growing in findings, the facilitation of movement focused treatment remains vastly

unrecognized as a primary form of treatment. The role the body plays in therapy grows, but the evidence supporting body-based treatment is still lacking within the mental health field (Dieterich-Hartwell, 2017). The topic of trauma and treatment is vast and thus further research is required. This can prove challenging as dual diagnosis often accompanies PTSD and in some clinical cases need to be addressed prior to focusing on the trauma to establish safety for the client and therapist (American Psychiatric Association, 2013). This paper focuses on the client-therapist dyad, while the elements of kinesthetic empathy, connection, rhythm, and attunement are utilized in individual and group sessions, further research may be conducted to address a larger group dynamic.

Additionally, there are myriad styles in which a D/MT session may be conducted. Some movement therapists prefer the use of “dance” implementation in therapy, as more of physical/recreational therapy, versus the movement focused style of the body as a tool within therapeutic settings of all styles (top-down and bottom-up: in an office, a classroom, a gym, in home, etc.).

However, the assessment lens focused on the body, and the therapeutic use of kinaesthetic empathy, co-regulation, and attunement breaks barriers as seen in the studies by Bentzen (2015), Shafir (2015), Dieterich-Hartwell, R. (2017), and others, calling for the need to implement, explore, and research further within this field.

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## Appendix A

### Terms used:

**Acute trauma:** being a onetime experience, like that of a car accident, rape or natural disaster

**Amygdala:** An area within the structure of the brain that holds a primary role in the processing of memory, decision-making, and emotional responses.

**Complex/developmental trauma:** classification to reference adults and children with severe and prolonged exposure to childhood interpersonal trauma (Herman, 1992).

**Dissociation:** a term to describe mental states characterized by a disruption of conscious awareness (American Psychiatric Association, 2013)

**Re-lived trauma:** bodily sensations, memories, flashbacks, smells, or experiences which the victim is overwhelmingly brought back to the traumatic event. The victim lives a previous traumatic event in a present moment (Van der Kolk, 2005).

**Re-traumatized:** a relapse into a state of trauma, triggered by some subsequent event (see re-lived trauma).

**Trauma:** incidents, events, interactions, either single episode or chronic occurrences that cause the system to be overwhelmed and result in nervous system dysregulation (Duros & Crowley, 2014)

**Trauma Informed-care:** treatment care provided by a person, institute or group whom is knowledgeable in the field of the prognosis, for the sake of this paper, the field of trauma (providing trauma-informed-care).

**Traumatic stressor:** Any event (or events) that may cause or threaten death, serious injury, or sexual violence to an individual, a close family member, or a close friend (Scaer, 2007).

**Trauma Vertex:** The pendulum between internal hyper aroused and hypo aroused states (Scaer, 2007).

**Trigger/ activator:** any external stimuli that reminds the victim of a survived traumatic experience or causes victim to respond to external stimuli as if the victim was being traumatized again (Van der Kolk, 2005).

**Physiological:** relating to the branch of biology that deals with the normal functions of living organisms and their parts.

**Proprioceptive awareness:** Awareness of the body as it orients to and environment or in special relation.