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## How Art Therapy Can Help Survivors of Trauma Access an Embodied Sense of Safety: A Literature Review

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**How Art Therapy Can Help Survivors of Trauma Access an Embodied Sense of Safety:**

**A Literature Review**

Capstone Thesis

Lesley University

May 5, 2023

Catherine L. Ripley

Art Therapy

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### **Abstract**

Traumatic stress can disrupt systemic rhythms in the brain and body that enable a person to feel safe in the world. Therefore, the initial phase of trauma treatment must focus on establishing an embodied sense of safety. This literature review examined cross-disciplinary data to assess whether art therapy can help trauma survivors access an embodied sense of safety, and if so, what therapeutic mechanisms contribute to its effectiveness. The data indicated that trauma-informed art therapy can support an embodied sense of safety through activating key therapeutic factors that downregulate instinctual defense mechanisms which can occur as a result of traumatic stress. Results revealed seven therapeutic factors that contributed to feelings of safety: therapeutic alliance; group belonging; synchrony with the natural world; affect regulation; sensory integration; a positive emotional state; and a sense of agency. Additionally, the paper outlines specific art therapy interventions that exemplify each therapeutic factor, and mechanisms that can illuminate how these therapeutic factors support an embodied sense of safety.

*Key words: art therapy; safety; neuroscience; sensory integration; agency*

*Author Identity Statement: The author is a middle-aged straight, white American woman who was raised in the United States and has resided in Southeast Asia for twenty years.*

### Introduction

The human body mediates a person's existence in the world. Without a body, a person cannot exist. The body conveys information reciprocally between the environment and the self and cannot be separated from the self. As such, the embodied self is like a tapestry depicting an autobiographical story. By tracing the patterns of story threads, we can learn about the person's habits, interests, relationships, and life history. Pat Ogden (2022), the founder of Sensorimotor Psychotherapy, proposed the existence of a *somatic narrative*, stating that people develop habits of posture that reflect "trauma, attachment and sociocultural history, related beliefs, expectations, emotional biases, and affect regulation capacities" (Ogden & Goldstein, slide 12). Trauma exposure can leave an indelible imprint on the body, disrupting somatic rhythms, hormonal homeostasis, threat perception, and autonomic regulation, and disturbing neurological systems such as sensory perception, executive function, and memory formation (Homann, 2020; van der Kolk, 2014). It is the task of the effective therapist to attend to the story conveyed by the body.

Sigal (2021b) stated of Posttraumatic Stress Disorder (PTSD) that, "PTSD seems to damage the finely calibrated systems that inform us about our ability to feel safe in the world – internally and externally – and therefore distorts our sense of homeostasis and our ability to trust information from our senses" (p. 107). These symptoms can be understood as normal responses to extremely adverse experiences, however they can also result in the survivor chronically feeling unsafe, even when in a safe environment because traumatic memories have not been categorized by the brain as chronologically past events. Rather, these memories linger in the body and mind as disturbing emotional and sensory fragments (van der Kolk, 2014). Somatic symptoms resulting from the body's oversensitization to threat can lead to the engagement of coping mechanisms such as addictive behavior, self-harm, eating disorders, and dissociation as a means to distance from overwhelming and intolerable body sensations (Sigal, 2021b).

This literature review targets the initial phase of trauma treatment, which focuses on establishing a felt sense of safety, and lays the groundwork for future trauma reprocessing and reorienting phases. A phase-oriented trauma treatment protocol was originally proposed by Pierre Janet in 1898, and is still recognized today as the standard treatment for complex PTSD (Ogden & Fisher, 2015). Judith Herman (1992) picked up the model and outlined it as (1) "establishment of safety"; (2) "remembrance and mourning the trauma"; and (3) "reconnecting with ordinary life" (p. 155). The research and therapeutic practice of many other trauma therapists supported this kind of phased approach (Courtois & Ford, 2013; Ogden & Fisher, 2015; Rappaport, 2009; Richardson, 2016). British art therapist Nili Sigal (2021a) asserted that working with traumatic memory without laying a foundation of safety planning, grounding, and affect stabilization can be retriggering, and even harmful for clients with complex PTSD. Bessel van der Kolk (2014) put it this way, "In order to regain control over your self, you need to revisit the trauma: Sooner or later you need to confront what has happened to you, but only after you feel safe and will not be retraumatized by it" (p. 301). Establishing safety is the first step in the therapeutic journey.

This literature review considers whether art therapy was found to be effective in helping survivors of trauma access an embodied sense of safety, and if so, what therapeutic mechanisms contributed to its efficacy. The paper presents the integration of data from the fields of art therapy, expressive arts therapy, psychology, social psychology, social work, occupational therapy, trauma studies, and neuroscience, and identifies how cross-pollination between these fields can inform the practice of art therapy. This paper identifies the most important theories and trauma-informed therapeutic approaches recommended in the literature. The research revealed that art can, indeed, support feelings of safety, and identified a convergence of therapeutic mechanisms by which creative arts interventions can help regulate the body to enable a traumatized client to feel safe.

I am interested in this topic because I am a survivor of chronic developmental trauma, and because, for the last twenty years, I have been working with adolescent and post-adolescent girls and women in northern Thailand who are survivors of trauma including sexual abuse, domestic violence, trafficking in persons, and systemic oppression. I have both witnessed and personally experienced how survivors often suffer from social isolation; intrusion symptoms; avoidance behaviors; and distortions in arousal, reactivity, and sensory perception. This literature review will inform my ongoing work, help me select and design interventions that meet practical needs for the population in my context, and explore how freshly emerging neuroscientific research can inform art therapy theory and practice.

### **Method**

This research was conducted using a thematic process, identifying key concepts with weight given to neuroscience research in the field of trauma studies over the last twenty years, and assessing relationships within the literature. A key word cluster search was used to collect literature related to the terms "trauma", "embodied", "safety", "resilience" and "art therapy". Data included peer-reviewed journal articles, books, videos, and theses. Journal articles encompassed quantitative research, qualitative research, arts-based research, mixed-methods research, and meta-analyses. In addition to web searches, a manual search of reference lists in articles and books was conducted to identify additional publications that were pertinent to the research question. Where possible, concepts were traced back to primary source materials. Articles and book references were collected using reference management software. Books were stored in a Kindle library. Concepts and themes were collected and grouped in a Word document.

The process of data analysis consisted of surveying art therapy interventions that successfully helped trauma survivors feel safe in their bodies, and summarizing the results of each study with particular emphasis on the mechanisms that were effective. Themes that emerged were color coded,

resulting in eleven therapeutic factors. Of these eleven factors, seven themes stood out as most prominent. The data was then assessed to determine how these seven therapeutic factors correlated with other trauma research to assess relationships between the art therapy literature, and literature about trauma-informed-care in adjacent fields. This information supported the formation of hypotheses regarding the mechanisms for *how* the therapeutic factors found in successful art therapy interventions supported an embodied sense of safety for trauma survivors. Research findings were also evaluated in light of my own experience with trauma survivors in Southeast Asia, and learning obtained through classes at Lesley University, continuing education conferences, trainings, and webinars, and consultations with colleagues and clinical supervisors.

This capstone was written to fulfill the degree requirements for an MA in clinical mental health counseling with a specialization in art therapy. Over the course of my studies at Lesley University, and particularly through the research conducted for this capstone, my convictions have shifted from a focus solely on visual art therapy to a more expansive approach. I am increasingly convinced that the integration of multiple creative arts modalities is optimal for helping trauma survivors establish a sense of safety because different modalities recruit different neural networks and support holistic wellness. Such modalities include, but are not limited to, dance, movement, music, enactment, mindfulness, breath exercises, narrative, poetry, and guided imagery. Nevertheless, the scope of this paper will focus primarily on visual art therapy interventions except where the research indicated that visual art was effectively used in conjunction with another modality. It is my hope that expressive therapies practitioners from other arts modalities will evaluate their own strategies in light of the therapeutic factors presented here.

## Literature Review

### Definitions

#### ***Defining Art Therapy***

Art therapy is a psychotherapeutic profession in which clients engage in active art-making and creative expression to alleviate distress and enhance resilience (American Art Therapy Association, 2017). This occurs with the support of a professional art therapist who is trained in the integration of applied psychological theory with creative practices using kinesthetic, sensory, perceptual, affective, cognitive, and symbolic methods (Hinz, 2019). The American Art Therapy Association (AATA, 2017) asserted that, “Art therapy is used to improve cognitive and sensorimotor functions, foster self-esteem and self-awareness, cultivate emotional resilience, promote insight, enhance social skills, reduce and resolve conflicts and distress, and advance societal and ecological change” (p. 1). Art and creativity can also stimulate a *flow experience* which may help to integrate brain function between different parts of the brain and produce feelings of satisfaction (Oppland, 2019).

#### ***Defining an Embodied Sense of Safety***

Harricharan et al. (2021) stated that “embodiment refers to how an individual’s perception of the world can shape how the body meaningfully interacts with his/her environment” (p. 13). Those who suffer from traumatic stress often experience a disconnect between their inner felt sense, and sensory cues coming from external sources (Malchiodi, 2022). They may experience an overwhelming feeling that they are not safe in their bodies, and that they cannot protect themselves from danger (Malchiodi, 2022). This can be paired with feelings of helplessness, and unclear physical and psychological boundaries between self and the environment, or self and others (Kearney & Lanius, 2022; Rothschild, 2000; van der Kolk, 2014). Survivors may report feeling hyper-sensitive to sensory stimuli resulting in reactivity or sensory overwhelm (Malchiodi, 2022). Conversely, sensory perception may also become hypo-sensitive resulting in the person feeling numb, withdrawn, or lethargic (Malchiodi, 2022).



Traumatic stress reactions (including the capacity to dissociate from bodily sensations) are an adaptive survival response to terrifying and overwhelming experiences, not an expression of pathology. However, when these trauma response patterns persist even in safe conditions, they can cause distress. Malchiodi (2022) described using expressive arts therapy as a way to re-sensitize the body, and reintegrate external sensations with the internal bodily felt sense. "Embodiment implies that the central focus for emotional repair, transformation, and recovery is through becoming aware of our physical being through our senses" (Malchiodi, 2022 [Webinar]).

In defining embodiment, it is also important to acknowledge that conceptualizations of the body may vary across cultures. In one sense, the body is a phenomenologically experienced aspect of the individual self (Scheper-Hughes & Lock, 1987). However, the body is also conceived of in many cultures as a collective social self in a systemic interdependent relationship with other people, community, culture, and the natural environment (Scheper-Hughes & Lock, 1987). In this worldview, the individual body is inextricable from context, and identity is formed collectively. Health consists of order, balance and harmony in the collective system (Scheper-Hughes & Lock, 1987). The body also houses centuries of experience of the embodied selves that came before us, and the complex dynamics of power, control, oppression, trauma, and survival wisdom therein (Menakem, 2017; Yehuda, 2022). In this paper, conceptualizations of embodiment will be conceived of as both an individual and a collective endeavor in pursuit of holistic belonging to self, to one another, to the natural world, and to the generations who came before us and who will follow us. This is summarized in the Hebrew term *shalom*. It is my prayer that as human beings enter into an embodied sense of safety, we will discover ourselves to be enfolded within shalom.

### ***Defining Integration***

This paper uses the term *integration* in reference to concepts such as *sensory integration* or *bilateral hemispheric integration*. This term can have different definitions in different contexts.

Following Dan Siegel's (2020) definition, the word *integration* in this paper will refer to the connectivity or linkage between differentiated parts which creates a functional synergy that is greater than the sum of the individual parts. It is not intended to imply a "blending" or "homogenization" (Siegel, 2020, p. 14), but rather a functioning inter-related system.

### ***Defining Trauma***

The United States Department of Health and Human Services Substance Abuse and Mental Health Services Administration (SAMHSA, 2021) defined trauma as "intense physical or emotional stress reactions" (p. xix) due to exposure to "a single event, multiple events, or a set of circumstances that is experienced by an individual as physically and emotionally harmful or threatening, and that has lasting adverse effects on the individual's physical, social, emotional, or spiritual well-being" (p. xix). "Trauma can affect individuals, families, groups, communities, specific cultures, and generational cohorts. It overwhelms an individual's or community's resources to cope" (SAMHSA, 2021, p. 7). The impact of extremely adverse experiences can vary due to individual factors, interpersonal factors, organizational factors, societal factors, developmental factors, and time in history (Payne et al., 2015; SAMHSA, 2021).

Past experiences can prime judgement of a threat and inhibit capacity to respond (SAMHSA, 2021). This is because people establish certain set points or default patterns in their physiology and behavior based on implicit memory of past experience, and the nervous system strives to maintain those patterns because humans tend to be comfortable with what is familiar (McCraty & Zayas, 2014). New sensory input is appraised on the basis of established reference points to determine whether the incoming stimulus poses a threat or not (McCraty & Zayas, 2014).

Trauma exposure can also have long-term physiological effects. In a study of adverse childhood experiences conducted by Kaiser Permanente and the US Centers for Disease Control and Prevention, Felitti et al. (1998) concluded that, "We found a strong dose response relationship between the breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several of

the leading causes of death in adults” (p. 251). These included “ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease” (Felitti et al. 1998, p. 251). In working with the UK’s National Health Service, art therapist Nili Sigal (2021a) also observed that traumatized clients often suffered from disorders such as fibromyalgia, inflammatory disorders, chronic fatigue syndrome, substance use disorders, self-harm, or eating disorders. SAMHSA (2014) found that “emerging research has documented the relationships among exposure to traumatic events, impaired neurodevelopmental and immune systems responses and subsequent health risk behaviors resulting in chronic physical or behavioral health disorders” (p. 2).

Trauma can occur due to direct exposure to a traumatic event or events, or condition, or through indirect exposure such as witnessing or hearing about someone else's exposure to such experiences. Traumatization through indirect exposure is sometimes called *secondary trauma*, or *vicarious trauma*, and it frequently occurs among professional service providers (SAMHSA, 2021). *Structural trauma* can occur when social, political, and economic systems coalesce to compromise peoples’ safety, and the meeting of their basic needs, such as occurs in conditions of poverty, racism, gender inequality, and the oppression of sexual minorities (Frost & Meyer, 2012; Schultz et al., 2016). *Historical trauma* can occur when a people group experiences a catastrophic trauma such as war, genocide, or slavery. The consequences of that experience can ripple down to future generations through epigenetic transmission and behavioral conditioning (Schultz et al., 2016; Yehuda, 2022). The term *complex trauma*, also known as *developmental trauma*, refers to the pervasive impact of neglect or chronic trauma exposure during childhood and/or adolescence (SAMHSA, 2021; van der Kolk, 2014). Complex trauma may result in long-term neurological and endocrine system changes that can cause problems with cognition, affect regulation, memory, mood, and physiological health (Haglund et al., 2007). In short, exposure to adverse experiences can activate threat defense mechanisms in a person or community that have long-term physiological and behavioral consequences.

This paper uses the terms *trauma survivors* or *survivors* to indicate people who are experiencing traumatic stress due to direct or indirect exposure to one or more traumatic events or conditions, or chronic developmental trauma. This term is used in an effort to avoid the stigmatizing term *victim*, and to emphasize the human capacity for resilience and efficacy. The term *client* is used to designate someone who is a beneficiary of mental health services.

## **Context**

### ***Prevalence of Trauma***

A World Health Organization study published in 2016 conducted surveys of trauma exposure in 24 countries across six continents with a sample of 68,894 adult respondents. They assessed for exposure to 29 common traumatic events. Over 70% of respondents had experienced at least one traumatic event, and 30.5% had been exposed to four or more such events (Benjet et al., 2016). Most people who are exposed to a traumatic event do not develop Post-Traumatic Stress Disorder (PTSD) as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5, 2013)<sup>1</sup>. A meta-analysis of 35 longitudinal studies found that only 28.8% of those exposed to potentially traumatizing events subsequently developed the full diagnostic profile for PTSD, and maintained these symptoms for at least one month after trauma exposure. This figure dropped to 17.8% after 3 months and remained stable for a year (Santiago et al., 2013).

Nevertheless, SAMHSA found that many people who were exposed to potentially traumatizing events do develop sub-clinical posttraumatic stress symptoms, even if they don't qualify for a full PTSD diagnosis (2014). Additionally, individuals exposed to traumatic events were found to be at increased

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<sup>1</sup> The diagnostic criteria for PTSD in the DSM-5 can be summarized as A) exposure to actual or threatened death, serious injury, or sexual violence; B) the presence of one or more intrusion symptoms; C) one or more avoidance behaviors; D) negative alterations in cognitions or mood associated with the traumatic event; E) two or more symptoms of marked alterations in arousal or reactivity F) duration of symptoms lasting more than one month G) causing clinically significant distress or impairment; H) not attributable to the physiological effects of a substance or another medical condition; Specify whether dissociative symptoms are present (American Psychiatric Association, 2013)

risk for developing substance use disorder, anxiety, depression, suicidal ideation, attention-deficit hyperactivity disorder, or conduct disorder (Forman-Hoffman et al., 2016; SAMHSA, 2021). These statistics suggest that there is a high probability that many clients who seek mental health services have been exposed to at least one traumatic event that has affected them in some way whether they have a PTSD diagnosis or not (SAMHSA, 2021). If clients have not experienced trauma exposure directly, someone close to them may have, which could also indirectly affect clients. Therefore, it is prudent for mental health clinicians to understand how trauma exposure can potentially play a role in the diagnostic profiles of the clients we serve.

### ***Traditional Treatment Approaches***

The American Psychiatric Association (2022) recommended that PTSD and other trauma-related disorders be treated with Cognitive Processing Therapy (CPT), Prolonged Exposure Therapy (PE), Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), Eye Movement Desensitization and Reprocessing (EMDR), or Group Therapy. Among these therapeutic approaches, *safety and affect regulation* are common foundational components (Floro, 2021; Foster & Hagedorn, 2014; Shapiro, 2018). Art therapy has been used effectively in combination with TF-CBT, EMDR, and Group Therapy to treat traumatic stress and move toward resolution of inner conflicts (Foster & Hagedorn, 2014; García-Reyna, 2021; Morison et al., 2021; Sigal & Rob, 2021). Up to this point, there has been insufficient research to demonstrate whether art therapy alone could produce results equal to the evidence-based therapies listed above. However, data is now beginning to emerge demonstrating that art therapy can effectively treat trauma-related symptoms. A meta-analysis of 40 studies involving 2,534 children and adolescents showed promising results indicating that creative arts-based interventions definitively reduced trauma symptoms (Morison, et al., 2021), and art therapy is increasingly being recruited as an adjunctive therapy with survivors of trauma (Foster & Hagedorn, 2014; García-Reyna, 2021; Morison, et al., 2021; Sigal & Rob, 2021). Also, the pleasurable nature of art-making can elicit emotional receptivity

to the therapeutic process and minimize attrition (Coholic, 2011; Coholic & Eys, 2016). Evidence is mounting for the value of using art therapy interventions with survivors of trauma.

### ***Trauma-Informed care (TIC)***

SAMHSA (2021) adopted a definition of trauma informed care proposed by Hopper et al., which stated that "Trauma-Informed Care is a strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological, and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment" (p. xix). SAMHSA's sixteen intervention and treatment principles of TIC include recommendations such as implementing universal trauma screening; viewing trauma through a sociocultural lens; minimizing retraumatization; creating a safe environment; supporting control, choice, and autonomy; and using a strengths-based approach (SAMHSA, 2021).

### ***A Brief History of How Psychological Theory has Informed Art Therapy***

The creative arts have served as a conduit for restoration and well-being for many millennia, and art therapy finds its earliest roots in these ancient healing traditions (Malchiodi, 2003, 2020). The formalization of the field of art therapy as a method for the delivery of psychotherapy emerged in tandem with the field of psychology. Early psychological theories such as Freudian psychoanalysis and Jungian psychodynamic therapy heavily influenced the development of art therapy, and those theories continue to provide a foundation for the field. Early practitioner Margaret Naumberg considered art to be a symbolic expression of the unconscious, while Edith Kramer believed that art was a "'royal road' to sublimation, a way of integrating conflicting feelings and impulses...helping the ego to synthesize via the creative process itself" (Rubin, 2010, p. 58).

As the field developed, art therapists such as Natalie Rogers, the daughter of Carl Rogers and founder of the Person-Centered Expressive Therapy Institute, incorporated humanistic approaches

(Malchiodi, 2003; Rubin, 2010). More recently, Laury Rappaport based her *Focusing-Oriented Art Therapy* (2009) approach on the work of Eugene Gendlin, a humanist contemporary of Carl Rogers. Janie Rhyne published *The Gestalt Art Experience* in 1973. Rawley Silver's art therapy approach relied on theories of cognitive psychology such as Jean Piaget and others (Rubin, 2010, p. 105), as did Lusebrink and Kagin's *Expressive Therapies Continuum* model (Hinz, 2019). Hanna Kwiatkowski and Helen Landgarten used art in family therapy (Rubin, 2010), and practitioners such as Shaun McNiff, Paulo Knill, and Pat Allen emphasized art-making as a spiritual experience (Allen, 2013; Rubin, 2010).

The theoretical approaches of these courageous pioneers enrich art therapy as a therapeutic modality. At the same time, it should be acknowledged that art therapy's historical reliance on the field of psychology may have impoverished the scope of the field of art therapy by focusing primarily on the contributions of white European and American influences while excluding the knowledge base of practitioners from other cultural contexts and healing traditions. Now is the time to expand the reach of the field of art therapy as a form of psychotherapy by honoring our indigenous roots, and by recovering the voices of practitioners from diverse cultural traditions around the world. For this reason, this paper deliberately sought to incorporate research from a multiplicity of cultural contexts.

Emerging neuroscientific research in the field of trauma studies now presents a unique opportunity for the field of art therapy to once again broaden its theoretical base to include new data about the mechanisms for how creative arts can directly target and alleviate human distress to help clients resolve mental health symptoms and feel safe in their bodies. Neuroscience also has the added benefit of focusing on universal physiological processes that are applicable to human beings of all cultures. This literature review attempts to bridge the gap between art therapy and emerging theories of trauma-informed care and the autonomic nervous system, and invite further conversation between the fields of art therapy and neuroscience.

## **Therapeutic Factors That Contribute to Feelings of Safety**

### ***Therapeutic Alliance***

Research consistently indicated that the most important factor in the therapeutic process is the attuned therapeutic alliance between client and therapist (American Psychological Association, 2017; Geller & Greenberg, 2012; Geller & Porges, 2014; Martin et al., 2000; SAMHSA, 2021; Schwarz et al., 2018; Sitzler & Stockwell, 2015; Soulsby et al., 2021). In fact, “therapeutic outcomes may only be minimally attributed to specific techniques” (Geller & Porges, 2014, p. 178). Researchers and psychotherapists from all theoretical orientations have studied this relationship and sought to identify key elements that foster therapeutic change. In one such study, quantitative and qualitative research conducted by Geller and Greenberg (2012) found that it was the therapist’s presence and engagement that supported a felt sense of safety through the establishment of a mutual relationship between client and therapist. In a study that interviewed art therapists, key factors in the therapist’s presence were identified as attentive focus, joining with the client, the therapist’s sense of flow, comfort with allowing the unknown or unexpected to emerge, a sense of being present with the client, and preparing for the session (Schwarz et al., 2018)

*Polyvagal theory*, proposed by Stephen Porges (Geller & Porges, 2014; Porges, 2020), provided a working hypothesis to explain the neurobiological processes that are engaged when therapeutic presence generates feelings of safety. Porges (2020) coined the term *neuroception* to describe the subconscious neurological processes through which a person detects and evaluates signals of threat, life-threatening danger, or safety by comparing present sensory input to past experience. When a person *neurocepts* threat, the sympathetic nervous system activates defensive strategies associated with mobilization (often referred to as *fight or flight* behaviors) (Porges, 2020). The prefrontal cortex then downregulates to conserve energy, so that energy can be redirected to muscles to facilitate a quick and automatic fight or flight response to threat (Thayer et al., 2009).



Processes associated with the two branches of the vagal nerve inspired the name *polyvagal theory*. Both branches of the vagal nerve deploy the parasympathetic nervous system, but each branch uses it for different objectives. Under neuroception of extreme or sustained threat, the *dorsal vagal system* actuates defensive strategies associated with tonic immobility (often referred to as the *freeze*, *faint*, or *death feign* response that is characterized by submission, emotional shutdown, fainting, defecation, and/or dissociation) (Porges, 2020; Porges & Dana, 2018).

The other branch of the parasympathetic nervous system responds to neuroception of safety. Polyvagal theory refers to this as the *ventral vagal system*. It is associated with the calming of the body and digestion, supporting social interaction and physiological homeostasis (Porges, 2020). This state is characterized by optimal autonomic balance that enables health, growth, and restoration (Porges & Dana, 2018). When the ventral vagal system is engaged, people feel safe and can enjoy social interaction with others. Significantly, this system is bidirectional, meaning that the ventral vagal system supports social engagement, and social engagement reciprocally activates the calming and balancing ventral vagal system (Porges & Dana, 2018). When activated, the ventral vagal system can exert control over the sympathetic and dorsal vagal systems to inhibit defensive mechanisms. In summary, social engagement in contexts in which a person feels safe results in the deactivation of neurobiological defense systems (Geller & Porges, 2014). So when the client and therapist form a positive therapeutic alliance, the client can lower defenses and experience the calming and stabilizing effect that occurs with the engagement of the ventral vagal system, creating optimal conditions for changing neurological pathways.

Attunement is established when two people experience an empathic synchronization with one another, such as occurs between an attuned caregiver and an infant (Colace, 2017). When the therapist and client are relationally attuned, the nervous systems of both therapist and client can have a calming mutual and reciprocal influence on one another (Geller & Porges, 2014). This is why it is important for therapists to practice self-care, and be well-regulated in their own bodies when working with clients

(Sigal, 2021a). Sigal (2021a) contended that in this way, therapists “model to clients the possibility of living in a body that is grounded, connected, and present in an authentic way” (p. 29).

Studies by Geller and Porges (2014) also identified other necessary components of a safe therapeutic presence:

Expert therapists have reported that the experience of therapeutic presence involves concurrently (a) being grounded and in contact with one’s integrated and healthy self; (b) being open, receptive to, and immersed in what is poignant in the moment; and (c) having a larger sense of spaciousness and expansion of awareness and perception. This grounded, immersed, and expanded awareness also occurs with (d) the intention of being with and for the client in service of their healing process. (p. 179)

The attuned therapist, then, is grounded and open and has an authentic desire for the client to experience healing. The therapist can also deliberately demonstrate cues of safety such as a softened gaze and facial expression, receptive posture and gesture, attentive listening, calm breathing, and variations in vocal prosody so that the client neurologically detects that this is a safe therapeutic environment (Geller & Porges, 2014; Hass-Cohen et al., 2014; Malchiodi, 2020; Porges & Dana, 2018; Porges, 2020;). Therefore, with conscious, consistent, and self-aware presence, the therapist can use their own well-regulated autonomic state to invite a calming of the client’s autonomic nervous system (Geller & Porges, 2014; Porges, 2020). Polyvagal theory calls this kind of social attunement *coregulation* (Porges, 2020). For these reasons, the therapeutic alliance is the foundational component of the therapeutic process.

Many art therapy processes support a positive therapeutic alliance. For example, the *scribble chase* exercise can be used to facilitate social attunement (Hinz, 2019, Malchiodi, 2003). The therapist can also model the use of visual art materials and techniques, and create alongside the client to support attunement and coregulation (Teoli, 2019). Mirroring movements or mirrored drawing can stimulate

kinesthetic empathy and attunement (Hoj, 2022; Iacoboni, 2008; Segni mossi, n.d., *pairs, symmetry*). While moving or drawing in synchrony, the therapist and client also attend to one another's breathing, muscle tension, movements, mark-making, and gaze, which activates the attachment system, and the mirror neuron system (Berrol, 2006; Colace, 2017; Homann, 2010; Iacoboni, 2008). In summary, art therapy can support an attuned therapeutic alliance, engaging the calming ventral vagal system, and downregulating neurobiological defense mechanisms which establishes optimal conditions for therapeutic change.

### ***Group Belonging***

The experience of belonging is a critical component of trauma prevention and intervention. Many kinds of traumatic experiences are correlated with social isolation. For example, Tsai et al. (2012) found that higher rates of PTSD correlated with less social support, less secure relationships, and poor social and family functioning in US veterans returning from deployment in Iraq and Afghanistan. Structural and historical trauma can also disrupt community cohesion and cause loss of cultural identity (Frost & Meyer, 2012; Schultz et al., 2016). Niwenshuti (2020) recounted the trauma he and his community experienced during the Rwandan genocide. He wrote, "A major characteristic of this extreme violence is to cut off sources of support (real or imaginary). Fear, guilt, isolation, regret, disconnection, deterioration of relationships, losing bodily parts and family members, running away from home, are among the indicators or effects from such extreme violations of life" (p. 117). He concluded that "...genocide, even *apartheid*, like all colonial crimes, is a disembodied experience" (p. 118). It is important to note that Niwenshuti used the term "disembodied" to describe both violations of the phenomenologically-experienced individual physical body, and violations of the collectively-experienced relational body. In this way, the individual body is perceived to be embedded in and inextricable from social context.

Abraham Maslow (1943) identified belonging as a core human need, along with meeting physiological needs and safety. People who have experienced trauma have a particular need for belonging and trustworthy social support. Research by Zapor et al. (2018) indicated that a reliable and satisfying social support network helped survivors of intimate partner violence to initiate change, and establish long-term safety. Community connection satisfies needs for collective affiliation, influence, emotional connection, accountability, mutual responsibility for one another's well-being, shared resources, intergenerational relationships, and the establishment of collective identity (Frost & Meyer, 2012; McMillan & Chavis, 1986; Schultz et al., 2016). Conversely, research by Block et al. (2018) contended that "individual psychotherapy is often steeped with individualism and western ideals, which may not coincide with the refugees' cultural values" (p. 932). A study of Latino and American Indian/Alaska Native communities also highlighted the detrimental effect of interventions for trauma survivors that overlooked or even disrupted community connectedness, and concluded that "increasing capacity for connection should be targeted in healing efforts" (Schultz et al., 2016, p. 42). These findings suggest that group art therapy interventions may be more culturally resonant than individual therapy for people from cultures that value collectivism over individualism.

Group art therapy offers natural opportunities for social engagement. Spiegel et al. (2006) asserted that "group behavioral treatments are recommended for PTSD so people can share traumatic material within safety, cohesion, and empathy provided by other survivors and so that they can gain the ability to form trusting relationships" (p. 158). Crenshaw (2006) and Teoli (2019) found that group expressive arts therapy supported social skill development and social bonding, and helped clients develop safe and trustworthy relationships.

Laura Teoli's (2019) doctoral research at Lesley University found that through making art together in a group setting, group members and the therapist established a supportive community. This collaborative and creative environment reduced power disparities between the participants and the

therapist and increased participation and trust (Teoli, 2019). Participants also reciprocally inspired one another to try new artistic techniques and affirmed one another's curiosity (Teoli, 2019).

Specific art therapy processes can enhance feelings of social connection. For example, artistic genograms can be used to help clients map key family and community connections and support social belonging (McGoldrick et al., 2020; Schroder, 2015). One group of children created a mural of a remote island where each participant drew imaginal resources that they could “contribute” to help everyone on the island survive (Sitzer & Stockwell, 2015). Sharing materials among group members, and providing interactive directives can also support a sense of social connection. In short, art therapy conducted in groups, and art therapy interventions that emphasize human connectedness can offset social isolation often experienced by trauma survivors.

### ***Synchrony with the Natural World***

As human beings, we are interconnected with those around us and with our natural environment (Bertling, 2015; Creel, 2005). Insofar as trauma causes fragmentation of interdependent relational bonds (as described above), it disrupts collective identity. Likewise, trauma to the environment such as water pollution or forest fires, and confiscation of or forced displacement from one's land also disrupt the mental, physical, and economic health of individuals, communities, and nations, and are experienced as a violation of the individual and collective body (Berger, 2020; Block et al., 2018; Kalaf & Plante, 2020; Klauck, 2021; Niwenshuti, 2020; Soulsby et al., 2021). Many collectivist-oriented cultures (which make up the majority of the world) recognize and value the importance of living in harmony with nature and its rhythms. Korean art therapists Park et al. (2021) emphasized that “humans and nature must coexist and harmonize with each other in one body” (p. 61). In fact, Sue et al. (2019) found that *most* non-Western indigenous cultures emphasize the harmony and interrelatedness of life forms, the natural environment and the cosmos. Illness is believed to stem from disharmony in

relationships with others or nature, or lack of synchrony between internal and external forces (Sue et al., 2019).

Bruce Perry (Perry & Winfrey, 2021) relayed a story of visiting with Māori people in New Zealand and learning about them through the lens of family history, storytelling, shared meals, and interacting with nature. They recounted stories of colonization, racism, and cultural genocide, and they walked through the forest and along the ocean to learn lessons from the wisdom of the natural world. Perry (2021) wrote, “For my Māori hosts, pain, distress, and dysfunction would arise from some form of fragmentation, disconnection, dyssynchrony” (Perry & Winfrey, p. 249). The local healers assessed that the Western medical model of breaking people down into various component body parts assigned to various medical specialists overlooked the complexity of human beings, so their interventions were sometimes rendered ineffective because the core problem of lack of connectedness was not addressed (Perry & Winfrey, 2021). They contended that healing occurred through reconnection with family, community and nature (Perry & Winfrey, 2021).

Imbalance and disharmony are also considered a primary cause of mental illness in cultures that are influenced by Confucian values (Liu, 2022). Asian philosophical aesthetics (based on underlying Confucian values) assert that humans should seek to exist in harmony with one another and with nature (Park et al., 2021). In fact, Asian perceptions of subject and ground are so visually integrated that individual subjects separated from their context are more difficult for Asians to identify than for Westerners (Nisbett, 2003; Park et al., 2021). This is why traditional Asian landscape paintings often blur boundaries between the main subject and the background (Park et al., 2021). Perception is integrally embedded in context. It is important for art therapists to understand that balance and harmony with others and the natural world are crucial for human thriving, and inextricably linked to self-identity in many cultures.

Scientific evidence also supports the therapeutic value of human encounters with nature. In a study involving 280 subjects, immersion in a forest environment (under safe weather conditions) was shown to lower stress more effectively than immersion in an urban environment, as demonstrated by decreased salivary cortisol levels and lower blood pressure, pulse, and sympathetic activation (Park et al., 2010). The forest also stimulated calming parasympathetic activation, alleviated psychological tension, depression, anger, fatigue, and mental confusion (Park et al., 2010). One meta-analysis assessed 17 studies with over 1,400 participants, and found that anxiety, depression, anger, fatigue, and confusion were alleviated by exposure to a forest environment (Shim et al., 2022). Cortisol and malondialdehyde (two biomarkers for stress) showed a measurable decrease. Participants' blood pressure decreased. Heart rate variability improved, and social cooperation, vigor, and self-esteem were enhanced (Shim et al., 2022). These findings point to the therapeutic benefit of interventions that support synchrony with the natural environment.

There are many ways that art therapy interventions can facilitate synchrony with nature. These include using natural materials in the creative process, using natural occurrences as metaphors for healing and growth, emphasizing human interdependence with nature, and modeling the use of media in accordance with its natural properties. When selecting natural art materials, homemade paintbrushes can be made with sticks, grasses, feathers, leaves and tape (Malchiodi & Warson, 2021). Natural items can also be collected and used to create circular assemblages, sometimes referred to as *mandalas*. The resulting still-life can be expressed in a new form as a painting or expressive movement (Witchayar Moleechart, personal communication, January 26, 2022). Park, et al. (2021) asserted that the selection of media used in art therapy should include materials that are culturally familiar to the client and reflect their philosophical aesthetics. When working with Korean art therapy clients, they found traditional black ink wash painting on mulberry paper most suitable.

Natural occurrences can become metaphors for healing and growth. Warson (Malchiodi & Warson, 2021) suggested creating a *let it go bowl* of clay and other natural items. She recounted how her clients whispered, spoke, or shouted into the bowl, saying things that they would like to say to an abuser, or other thoughts and feelings they wished to release. Then they placed the unfired clay bowl outside in nature to decay naturally, releasing its symbolic weight into the earth as the clay dissolved back into the soil over time (Malchiodi & Warson, 2021). Berger (2020) worked with group of Jewish, Arab, and Druze children in Israel who were survivors of trauma. They enacted the role of *protectors* of the forest as it recovered from a forest fire, symbolizing their own recovery from trauma through generative processes including art-making and storytelling, and enabling the children to reframe themselves as powerful heroes.

Art therapy interventions can also facilitate synchrony with the environment by emphasizing human interdependence with the natural environment. Warson et al. (2015) incorporated culturally appropriate plants, roots, and herbs into art therapy with an American Indian community. The sensory interaction with plants, storytelling by elders, and art-making served to heighten attunement with nature, and awareness of the harmonious connections between people and the sacred plants, plant cycles, weather patterns, and wellness. Creel (2005) implemented an environmental arts education program for at-risk elementary students in Florida who had been exposed to substance abuse, gang wars, violence, and abuse. They learned about ecologically-conscious artists; created a ceramic tile about an endangered species; wrote poems to accompany the tile; designed, sketched and planted a garden using native plants; and created sculptures from recycled or natural materials. Students developed greater empathy, empathic behaviors, pro-social skills, and confidence (Creel, 2005).

Another way that the therapist can support synchrony with the environment is to model the use of media in accordance with its natural properties. Disharmony with others and the environment can be reflected in the way that people interact with artistic media. Dysregulated clients often try to assert



power over their artistic medium to subdue it, and force it to behave the way they want it to, regardless of the natural properties of the medium. This suggests that the client may take an aggressive and oppositional approach to the world in general. In art therapy, the therapist demonstrates how to use a medium (such as watercolors, or clay) in order to entrain the client in how to interact with the medium in a fully present and grounded manner (Teoli, 2019), working in synchrony with its natural properties. For example, the therapist may explain how the use of water increases the flow of watercolor pigment. Clients who try to use watercolor paints straight from the tube without adding water will find the medium to be sticky and non-compliant. The therapist also demonstrates how the paint is applied in multiple transparent layers with time to dry between each layer. Laying down thick layers of pigment without allowing time for the layers to dry will result in a muddy appearance. It is also impossible to use watercolors to paint a light color over a dark background because this is inconsistent with the natural properties of the medium and, thus, will cause the artist a great deal of frustration (Teoli, 2019). Learning about the properties of a medium can help the client knowledgeably select the medium that is most appropriate for the kind of artistic expression they wish to create. As the client learns to work in synchrony with the natural world, these principles can transfer to other areas of life.

### ***Affect Regulation***

Mastering affect regulation skills is essential to trauma recovery (van der Kolk, 2014). Those who suffer from PTSD often struggle with affect dysregulation, meaning that they have difficulty regaining control of emotional and autonomic activation after exposure to a distressing situation (Lanius et al., 2011). Inability to identify and regulate emotions can compromise the effectiveness of common trauma treatments such as exposure therapy, and such interventions could even risk reinforcing patterns of emotional overwhelm, rather than alleviating them (Lanius et al., 2011). Lanius et al. (2011) asserted that it is crucial to support clients in gaining emotional awareness, affect regulation skills, and the capacity to report bodily sensations before engaging in trauma reprocessing or exposure-based

therapies. Hass-Cohen et al. (2014) agreed, stating that it is essential for clients to become adept in the use of coping skills to balance arousal states before engaging in trauma processing.

The optimal homeostatic range of autonomic functioning has been called the *Window of Tolerance*; a term coined by Dan Siegel (2010). The window of tolerance is a way to visually represent the level of arousal that a client can tolerate. A client who is experiencing extreme traumatic stress may have a very narrow range of affect that they can tolerate before they exceed the boundaries of their window of tolerance, and become emotionally overwhelmed and dysregulated. The therapeutic task is to gradually widen the boundaries of distress tolerance, and increase the client's capacity to moderate the intensity of emotional response using healthy coping skills, so that they can more quickly return to emotional homeostasis after a distressing experience (Armstrong, 2019; Siegel, 2010). Spiegel et al. (2006) conducted a meta-analysis on using art therapy to treat PTSD in military veterans. Findings showed that group art therapy promoted relational bonding, provided containment for painful emotions, enabled the participant to regain a sense of emotional control and self-efficacy, and facilitated the reintegration of fragmentary traumatic memories (Spiegel et al., 2006).

Effective affect regulation skills can also lead to an increase in cognitive flexibility. Babla (2020) asserted that "a natural response to trauma is the desire to control; part of working through trauma is recovering a sense of freedom, potential for growth and openness" (para. 9). Once a client is able to exhibit greater tolerance for uncomfortable emotions and sensations, this can lead to downregulating defense mechanisms and can facilitate increased tolerance for unfamiliar thoughts and ideas supporting cognitive flexibility.

When people feel emotionally dysregulated, they may be able to explain rationally why they feel what they feel. But as van der Kolk (2014) asserted, "The rational brain cannot *abolish* emotions, sensations or thoughts (such as living with a low-level sense of threat or feeling that you are fundamentally a terrible person, even though you rationally know that you are not to blame for having

been raped)" (p. 301). He asserted that the only way to change emotions is to increase awareness of internally-felt sensations within the body, a capacity called *interoception* (van der Kolk, 2014).

Interoceptive awareness requires paying attention to internal sensations such as breathing, heart rate, temperature, hunger, satiety, digestion, and muscle tension. Paying attention to internal sensations is important because emotions are essentially bodily sensations. "Affective neurobiologists view emotions as physiologically-based and feelings as the mind's subjective interpretation of somatic cues" (Homann, 2010, p. 84). This means that people generally experience emotions first as internal visceral sensations, even before they can identify and name them (Sigal, 2021b). Once people are aware of their internal state, they can use specific techniques to gain control of their arousal system (van der Kolk, 2014).

Lanius et al. (2011) recommended using mindfulness practices, including body scans and yoga to support interoceptive skills, particularly in the early stage of trauma treatment. Mindfulness has become a mainstream component of trauma treatment in cognitive behavioral therapy and positive psychology approaches, and many interventions in this literature review found the combination of art therapy with mindfulness to be effective (Coholic, 2011; Coholic & Eys, 2016; Kalmanowitz & Ho, 2016; Rappaport, 2015; Selva, 2017). Mindfulness practices invite participants to direct their awareness to internal somatic sensations in the present, focusing on interoceptive perception such as breathing and heart rate, and musculo-skeletal sensations such as the body's position and orientation in space, sensations of movement, and spatial orientation (Payne et al., 2015). This awareness is paired with a compassionate and non-judgmental attitude toward self (Hölzel et al., 2011).

Mindfulness is believed to have originated in the contemplative spiritual traditions of Buddhism and Hinduism, but "mindfulness also has roots in Judaism, Christianity, and Islam" (Trousselard et al., 2014, p. 475). These practices are now being adopted into clinical psychotherapeutic settings due to research findings that support the medical and psychological benefits of mindfulness based on universal human physiological processes (Hölzel et al., 2011; Kabat-Zinn, 2013; Selva, 2017). Research revealed

that mindfulness can alleviate depression and chronic pain, reduce blood pressure and cortisol levels, and improve immune response (van der Kolk, 2014). It also reduced reactivity in the amygdala, and activated regions of the brain associated with affect regulation (van der Kolk, 2014).

Other benefits of mindfulness-based therapies include reductions in anxiety, depression, substance use disorders, eating disorders, chronic pain, sleep disorders, and attentional problems (Hölzel et al., 2011). Kalmanowitz and Ho (2017) conducted a qualitative study in Hong Kong on the use of art therapy with mindfulness for twelve adult refugees and asylum-seekers who had experienced multiple incidents of violence and political trauma. Participants reported that the art therapy and mindfulness treatment directly alleviated their symptoms, and they gave examples of how the interventions supported “calming, emotion regulation, catharsis, gaining emotional distance, and clarity of thought” (Kalmanowitz & Ho, 2017, p. 110).

Art therapy interventions support affect regulation through enhancing interoceptive awareness, using guided imagery, identifying client resources and strengths, and making artwork to explore triggers and difficult emotions. There are many ways to heighten interoceptive awareness. For example, in a *body scan*, the clinician can invite the client to notice internal body sensations in different areas of their body (interoception). These internal sensations can be externalized visually by inviting the client to make marks on a pre-drawn body outline using colored pencils or markers to bring these sensations into conscious awareness (Lanius & Malchiodi, 2021; Sigal, 2021a). This can be followed by asking the client to describe the sensations, engaging the prefrontal cortex (Lanius & Malchiodi, 2021). Homann (2010) asserted that “conscious tracking of sensations such as the rhythm of breathing, relaxing into the support of gravity, or bringing awareness to sensing the body...can support the organization of perception, arousal, and regulation at its psychobiological foundation” (p. 83)”. Creating artistic imagery through paintings or drawings depicting *interoceptive sensations* such as internal bodily tension also

increased interoceptive awareness (Sigal & Rob, 2021). Laury Rappaport (2015, 2009) used focusing-oriented expressive arts therapy and mindfulness with trauma survivors.

Porges and Dana (2018) asserted that that in the context of a positive therapeutic alliance, clients can learn skills to increase control over their own physiological state by activating ventral vagal pathways to stimulate the calming of the nervous system through voluntarily controlled breathing patterns, movements, vocalizations, and postures. This learned skill can empower the client to exercise greater affect regulation in situations of distress so that they are less likely to be hijacked by a hyper-reactive stress response (Porges & Dana, 2018). Breathing exercises should emphasize engaging the diaphragm and extending exhalation, which optimizes the ventral vagal system (Geller & Porges, 2014). Breathing exercises are widely used by art therapists (Crenshaw, 2006; Floro, 2021; Rappaport, 2013, 2015; Sigal, 2021a; Sitzer & Stockwell, 2015). In my practice, I have paired *Zentangle* drawing with breath exercises, encouraging the client to exhale while executing lines in their *Zentangle* design for fine motor stabilization and autonomic calming. Humming at different frequencies, sighing, and making sounds paired with extended exhalation can also support parasympathetic calming through afferent signaling from the diaphragm to the brain, and by creating a natural vibration in the body that stimulates the calming ventral vagal system (Lanius & Malchiodi, 2021; NICABM, 2020; Payne et al., 2015).

Daniel Siegel (2020) asserted that “guided imagery provides direct access to prelinguistic symbol imagination and processes driven by implicit memory” (p. 399). Guided imagery is the process of providing narrative guidance to elicit the internal visualization of images that produce a beneficial emotional shift, and a corresponding neurohormonal response in the body (Hart, 2008). Crenshaw (2006) asserted that guided imagery of calming and peaceful scenes could soothe a client in a hyper-aroused state. This practice has also been shown to decrease pain intensity (Hart, 2008). The *safe or calm place*, introduced by Neal Daniels (Shapiro, 2018) can strengthen an internal sense of safety (Sitzer

& Stockwell, 2015), and stabilize a client during situations of emotional disturbance (Floro, 2021). It has been successfully paired with drawing or painting (Sigal, 2021b; Zaghrou-Hodali et al., 2008). Another guided imagery exercise, the *identification of safe, wise, protective, or nurturing figures* (Sigal & Rob, 2021; Floro, 2021) can also be paired with art therapy to help clients identify internal and external resources (Sigal & Rob, 2021). One survivor of sexual abuse and domestic violence created a handmade doll to represent her grandmother, who was a safe, secure figure in her life (Stace, 2014). Clients can also create an imaginal or artistic *container* to symbolically “hold” distressing thoughts or feelings between sessions (Floro, 2021).

One important research study conducted by van der Kolk (2014) sheds light on why creative arts therapy may be preferable to talk therapy for some clients, particularly in the initial safety and stabilization phase of therapy. He found that when threat arousal was detected, fMRI scans indicated a significant decrease in brain connectivity in Broca’s area, a part of the left frontal lobe of the cortex that is involved in speech production (van der Kolk, 2014). This was expressed through inhibited ability to describe thoughts and feelings (van der Kolk, 2014). Van der Kolk asserted that survivors may develop a general *cover story* that explains what happened to them, but it usually does not fully capture the essence of the experience and it is rarely a coherent and chronological narrative (van der Kolk, 2014). When faced with extreme horror, words sometimes fail us. This can lead to feelings of frustration when clients have difficulty expressing themselves verbally. This research finding is important because it suggests that the efficacy of talk-based therapies may be compromised when the client’s autonomic nervous system is chronically engaged in defense against potential threat. Creative arts therapies can overcome this limitation because, unlike talk therapy, the process facilitates access to implicit memory without reliance on verbal expression (Lusebrink & Hinz, 2016; Spiegel et al., 2006; Stronach Buschel & Hurvitz Madsen, 2006).

Crenshaw (2006) noted that creative arts therapists often use visual imagery, symbolism and metaphor to support safety and containment, and minimize threat. These mechanisms can enable direct access to emotional content while bypassing the demand for verbal expression. This can be achieved through drawing, story, dramatic reenactment, sand tray creations, music, dance, movement, somatic therapies, and even graffiti. "By working through the safe haven of metaphor the therapist can maintain the safe distance that the child or adult needs from direct confrontation of traumatic material until he shows signs of readiness for the invitational track of therapy and can gradually move closer to directly confronting these events" (Crenshaw, 2006, p. 33). Sigal (2021a) also encouraged clients to use symbols and metaphors to describe the distress they felt in their bodies, and then give shape and form to the metaphors through artistic representation.

Triggers and difficult emotions can also be explored through art. Oil pastels, clay, collage, doll-making, and sand tray techniques can help clients identify their resources and strengths, stabilize affect, address problematic thoughts, and strengthen feelings of safety and self-esteem (Stace, 2014). SAMHSA recommended that clients create a list of circumstances that can trigger dysregulation, and prepare strategies for proactively returning to the window of tolerance when confronted with these circumstances (SAMHSA, 2021). In my practice, clients have found it helpful to draw triggers and recovery strategies. Sitzler and Stockwell (2015) also developed a series of art interventions targeting the emotion of anger. Similarly, Crenshaw (2006) used *three-step affect modulation drawings* (p. 29). In the first step, participants drew a visual representation of their anger using symbolic imagery. Next, they verbalized the imagined "voice" of the symbolic image. Finally, they considered what could be done to moderate the destructive force of the symbolic image (Crenshaw, 2006). In summary, art therapy is an effective way to heighten interoceptive awareness, enhance affect regulation skills, and expand the client's *window of tolerance*.

### ***Sensory Integration***

Research suggests that therapeutic interventions for PTSD should include sensory-based activities that support sensory integration and connectivity between midbrain structures and prefrontal structures. In 1972, Jean Ayres (2005) proposed the Ayres Sensory Integration Theory which asserted that sensory processing influences physiological state and how people interact with their environments. Sensory processing demands that people have the capacity to integrate sensory input through multiple channels simultaneously, and that they can discern what information is most salient. Harricharan et al. (2021) offered the example of greeting another person, saying hello, and shaking hands. We interpret visual cues when we see the person, hear the greeting through auditory channels, and experience tactile input through the handshake. This experience may also be influenced by our internal visceral and emotional response to the person based on our prior relationship with that person. Thus, this simple form of greeting requires the capacity for multi-sensory integration.

Trauma can cause disturbances in sensory perception that undermine a sense of safety and stability (Champagne, 2021; Harricharan et al., 2021; Lanius & Malchiodi, 2021; Malchiodi, 2020). For example, research by Mueller-Pfeiffer et al. (2013) found that visual processing was significantly altered in those with PTSD. Based on the particular brain systems affected, they postulated that this sensory processing deficit may be attributed to attentional dysfunction, and could interfere with the recognition of faces, scenes, and body parts, spatial representation, and visual memory (Mueller-Pfeiffer et al., 2013).

Research by van der Kolk indicated that during traumatic stress, Brodmann's area 19 showed heightened connectivity in fMRI scans (van der Kolk, 2014). Brodmann's area 19 is a region in the visual cortex where visual stimuli are registered when they enter the brain. Normally, visual images are quickly transferred to other brain structures for processing and meaning-making, but for trauma survivors, they appear to remain fresh and unprocessed in this area of the brain (van der Kolk, 2014). This finding may



explain the phenomenon of flashbacks common in PTSD, and may suggest that sensory interventions, such as art therapy, which support connectivity between visual processing and executive processing (Harricharan et al., 2021) could be helpful for trauma survivors.

Many people with PTSD also report experiencing light and sound as unusually intense, and these assertions have been scientifically validated (Bryant et al., 2005; Stewart & White, 2008). Many also experience difficulty with filtering specific auditory stimuli and inhibiting irrelevant environmental sound (McFarlane et al., 1993; Skinner et al, 1999). Subsequent findings by Stewart and White (2008) agreed, stating that “perceptual modulation and distractibility from auditory flooding” are problematic among those with PTSD. In a German study, Croy et al. (2010) found that PTSD was also directly correlated to increased olfactory sensitivity to unpleasant stimuli. Finally, in a study of 128 children who were survivors of trauma in South Africa, 91.4% exhibited sensory modulation dysfunction in one or more areas including touch (58.6%), visual stimuli (50%), movement (45.32%), body position (43.32), auditory stimuli (37.5%), and oral stimuli (29.69%) (Joseph et al., 2022).

In addition to the standard five senses, vestibular processing of trauma survivors can be disrupted, causing people to feel disconnected from their bodies, their spatial environment, and their center of gravity (Lanius & Malchiodi, 2021). The vestibular system interprets sensory stimuli related to balance and spatial orienting and helps people navigate in their environment (Lanius & Malchiodi, 2021). Biological rhythms such as breathing, heart rate and blood pressure are also disrupted by trauma due to sensory disintegration (Gray, 2015; Kearney & Lanius, 2022; McCraty & Zayas, 2014). People may lose a sense of where their body is in space (Lanius & Malchiodi, 2021). This feeling of disorientation can impair thinking, planning, sense of time, and sense of agency (Lanius & Malchiodi, 2021). Those who experience dissociative symptoms also report feeling a loss of bodily integrity which presents as a lack of clarity about where the boundaries of the body are (Rothschild, 2000). Jean Ayres (2005) asserted that

"one of the most basic of all human relationships is our relationship to the gravitational field of the earth" (p. 69). She further argued that:

gravitational security is the trust that we are firmly connected to the earth and will always have a safe place to stand. Gravitational security is the foundation upon which we build our interpersonal relationships...Sensory integration of the vestibular system does give us gravitational security. (Ayers, 2005, p. 69).

Establishing gravitational security is an important component of trauma-informed care (Champagne, 2021; Sanford 2021) and supports sensory integration of the vestibular system.

Research indicated that distortions in sensory perception can also have downstream effects on perceptions of self-related constructs, embodiment, somatic self-awareness, and relational boundaries (Kearney & Lanius, 2022). Those with PTSD often experience exaggerated emotional reactivity, and "instinctual defensive posturing" (Harricharan et al., 2021, p.8) even during resting states. Lanius and her team (2021) found that in subjects with PTSD, neural connectivity between the periaqueductal gray and the default mode network functioned in such a way that the default mode network (associated with one's sense of self) *only* lit up in an fMRI scan when the periaqueductal gray sensed a threat (versus lighting up under conditions of rest, as generally occurs in a non-trauma-exposed population). These findings suggest that for those with PTSD, a sense of threat is now fused to self-identity, so the person doesn't feel truly alive (truly *herself*) unless a threat is present (Lanius et al., 2011; Lanius & Malchiodi, 2021; van der Kolk, 2014). In conditions of safety, some people with PTSD may feel disconnected from the environment or dissociated from self because the default mode network is not engaging as it should, resulting in feelings of derealization or depersonalization (Lanius et al., 2011; Lanius & Malchiodi, 2021).

Malchiodi (2020) summarized that those who have experienced chronic trauma can become "cut off from their bodies" or lose consciousness of "how their bodies are communicating or sensing from their surroundings" (Chapter 1, Engaging the Body section, para. 2). Survivors of trauma may have

internal visceral reactions to sensory stimuli based on past experience that are out of sync with or disproportionate to the present level of threat or safety, causing them to lose confidence in their own neuroceptive capacities, which may lead them to disregard sensory cues (van der Kolk, 2014). Therefore, as van der Kolk (2003) asserted, it is essential to help people “learn to observe what is happening in present time and physically respond to current demands instead of recreating the traumatic past behaviorally, emotionally, and biologically” (p. 311).

Based on their neuroscience research, Harricharan et al. (2021) postulated that sensory-based treatment methods bring the prefrontal cortex back online, which helps to restore executive function, such as logic and decision-making. Restoring the engagement of the prefrontal cortex is a prerequisite for implementing traditionally-accepted front line treatments such as cognitive behavioral therapies (Harricharan et al., 2021). Harricharan et al. (2021) went on to assert that sensory-based treatments support the reintegration of traumatic memory, affect regulation, social cognition, and an integrated sense of “the embodied self” (Harricharan et al., 2021, p. 14). Activities that can facilitate sensory integration stimulate vision, touch, hearing, smell, taste, interoception, proprioception, and vestibular perception (Champagne, 2021; Lanius & Malchiodi, 2021).

Art therapy interventions that support sensory integration include bilateral stimulation, somatosensory techniques that support physiological grounding, and vestibular integration exercises. Homann (2020) and Warson (2021b) asserted that expressive arts techniques that employ bilateral hemispheric integration can support sensory integration. These include *air drawing* or movements that cross the midline of the body, drawing across the midline using large paper, spiral drawing, painting, clay, and felting stones (Warson, 2021b). Regarding bilateral stimulation, Warson (2021a) stated that the “benefits vary from grounding or stabilizing effect, to lower cortisol levels, engagement of neural networks, and improved functional brain connectivity” (p. 1). Cornelia Elbrecht’s (2023) guided drawing technique used rhythmic bilateral movement with crayons, finger paints, or liquid clay to increase

interoceptive awareness of body sensations and externalize them. The process was followed by cognitive integration through debriefing to reframe beliefs. (Elbrecht, 2023).

Somatosensory techniques support physiological grounding. Warson (2021a) used sensory stimuli and connections with nature to facilitate physiological grounding and help survivors of trauma reconnect with their bodies and the natural environment using art, movement, sensory exploration, and poetry. She used frequent intermodal transfers to transition between creative modalities, facilitating neural integration by activating different sensory pathways in the brain in quick succession (Warson, 2021a). Clients can also create a small, *portable safe/relaxing/peaceful place* containing items for self-soothing, such as a cue word, a nature item, and a vial of fragrant oil (Malchiodi & Warson, 2022). Clients can experiment with different kinds of sensory experiences, play with the speed, rhythm, quality and intensity of the stimuli, and write down whether each stimulus is calming or energizing, pleasant or unpleasant, so that they can call on their preferred sensory profile to support them in different circumstances (Kearney & Lanius, 2022; Ogden & Fisher, 2015; Pandev-Girard, 2022).

Many kinds of exercises can support vestibular integration. Art therapist Florence Cane used a tree exercise to support vestibular grounding, in which the client uses their body to enact an imaginal experience of growing from a small seed into a tall tree, with their feet pressing down into the ground like roots, and arms extending upward, like branches (Malchiodi & Warson, 2021). In my practice, I have found that this feeling of groundedness can be reinforced through subsequently drawing or painting a tree. Holding exercises in which the client places a hand on their head, heart, underarm, and/or stomach can also support feelings of safety. Peter Levine asserted that these exercises provided a feeling of bodily containment, and reducing feelings of overwhelm (NICABM, 2017). Activities that gently stimulate the vestibular sense, such as rocking, keening and trauma-informed yoga are calming to the mind and body (Harricharan et al., 2021; Kearney & Lanius, 2022; van der Kolk, 2014). When a person

feels disoriented, a series of gentle, slow head movements in specific directions can also help to reorient the vestibular system (Pandev-Girard, 2022).

Adjusting posture can influence mood in a bi-directional feedback loop (Armstrong, 2019). Research by Peper et al. (2017) found that sitting in an upright position versus a collapsed posture caused an elevation in mood and energy levels, and made it easier to access positive memories. This is because posture can affect hormone secretion (Carney et al., 2010). Pat Ogden suggested inviting the client to slowly move back and forth between a slouched posture and elongating the spine into an upright posture to increase interoceptive awareness, and asking the client to describe the internal sensations that occur (Ogden & Goldstein, 2022). These feelings can be explored artistically by inviting the client to paint a pair of paintings to represent their inner state, one while in a slouched posture (with the canvas on the table or floor), and one while in an upright posture (with the canvas securely attached to an easel). As the client moves back and forth between the two paintings/postures, they explore what emotions emerge and express them visually. To summarize, since art therapy is inherently sensory, it can be recruited to facilitate multi-sensory integration, reversing trauma-related sensory overwhelm and disorientation, and restoring access to the prefrontal cortex.

### ***A Positive Emotional State***

Barbara Fredrickson and her team at the Positive Emotions and Psychophysiology Laboratory at The University of North Carolina at Chapel Hill have been researching positive emotions for 25 years. Their research findings suggested that “pleasant emotional states created momentary and embodied states of expanded awareness that, over time, aggregated to augment an individual’s resources for survival, including social alliances, resilience to adversity, knowledge and reasoning capacity, and physical fitness and health” (The University of North Carolina at Chapel Hill PEP Lab, 2023). A series of research studies conducted by Fredrickson in conjunction with Robert Levenson in the 1990s also found

that positive emotions functioned as the most efficient mechanism for undoing cardiovascular stress related to the activation of anxiety and fear (Fredrickson, 2013).

Hass-Cohen (2016) asserted that positive emotions also trigger the release of rewarding neurotransmitters, such as dopamine, further fueling the cycle of positive feelings. Positive emotions can even facilitate the formation of more inclusive relational boundaries, and support creativity and cognitive flexibility (Armstrong, 2021; Fredrickson, 2013; Rowe et al., 2007). In short, as Fredrickson (2013) asserted, positive emotions *broaden and build*, leading her to propose the *Broaden and Build Theory*. Positive emotions broaden attentional focus, scope of awareness, and thought-action tendencies, and build resources for survival (Fredrickson, 2013). Conversely, negative emotions can narrow attentional focus, and thought-action repertoires (Fredrickson, 2013; Rowe et al., 2007). Other studies supported these findings and determined that the capacity to access positive emotions helped moderate stress reactivity, and supported recovery from the stress of bereavement following the death of a spouse (Ong et al., 2006).

Expressive therapies groups are a particularly effective conduit for generating positive emotions (Spiegel et al., 2006). Malchiodi (2020) asserted that:

While aliveness can be experienced in each of the arts, it is most evident in expressive arts groups where there is collective energy among members. It is a type of energy circulation found in singing, dancing, performing, art making, and even laughing together... In the arts, individuals are influenced by the energy of the group, making possible creativity, imagination, and play, which is not always possible in isolation. It is a synergy that takes on a life of its own, with one expressive movement, gesture, image, or sound leading naturally to others. (Chapter 1, Restoring Aliveness section, para.4)

The value of positive emotions is often underestimated. Diana Coholic (2011) has been conducting mindfulness-based art therapy for children with a history of trauma for several decades. In

her earlier research, she was surprised by how much the children enjoyed mindfulness-based art therapy, and the realization that having *fun* was critically important in the therapeutic process (Coholic, 2011). Children and parents reported that having fun with peers resulted in increased self-esteem, self-awareness, confidence, comfort with self, and ability to talk about their feelings (Coholic, 2011).

Attrition rates were low because the participants were enjoying themselves. The intervention resulted in improved mood and attentional focus, and better affect regulation skills. The children were more relaxed, and listened better both at home and at school (Coholic, 2011).

When considered from a framework of Fredrickson's research described above, it can be postulated that Coholic's mindfulness-based art therapy groups were effective because participants were enjoying themselves (Fredrickson, 2013). As Malchiodi (2020) asserted, making art can generate feelings of aliveness, joy, vitality, and connection. It can also reduce "physiological markers associated with stress" (King et al., 2019, p. 153). Malchiodi (2019) described expressive arts therapy as "resensitizing" the body or bringing back the sensation of "aliveness". Her Circle of Capacity model (Malchiodi, 2023) proposed that the goal of therapy is not just to cope with or expand tolerance for distressing symptoms, but also to expand the capacity for pleasurable experiences. The model asserts that expressive arts therapy aims to enlarge the "capacity to inhabit body & mind with joy, enlivenment, empowerment, compassion, curiosity, and playfulness", supporting "self-regulation, co-regulation & resilience that moderate hyperarousal" (p. 148).

Art therapy supports accessing a positive emotional state because making art can be fun. It is so widely accepted that creating art is pleasurable that few research studies have been conducted to examine the phenomenon. However, one study indicated that drawing artwork as a form of emotional expression using colored pencils, pastels, crayons, markers, and/or chalk significantly improved mood after exposure to tragic images, by comparison to copying line drawings or assembling puzzles, which were less effective (De Petrillo & Winner, 2005). A 14-week group wellness program for trauma-exposed

at-risk pre-teens used a series of drawing directives to successfully support coping skills, resilience, affect regulation, mindfulness, and social and emotional functioning (Sitzer & Stockwell, 2015). After implementing the program, the researchers asserted that “engaging the creative process was a welcomed opportunity to be spontaneous and playful without the constraint of rules. Art making is a fun activity that can enliven, energize and create a sense of pleasure” (Sitzer & Stockwell, 2015, p. 78). Creative arts therapies are an effective way to restore a trauma survivor’s ability to access positive affect states, which can support resilience, strengthen social alliances, broaden attentional focus, alleviate stress reactivity, reinforce cognitive flexibility, and enliven participants.

### ***A Sense of Agency***

As van der Kolk (2014) asserted, “‘Agency’ is the technical term for the feeling of being in charge of your life: knowing where you stand, knowing that you have a say in what happens to you, knowing that you have some ability to shape your circumstances” (p. 152). Hobfoll et al. (2007) maintained that in the wake of a natural disaster or mass violence, a sense of efficacy is essential. Learned helplessness is often a byproduct of trauma exposure (Crenshaw, 2006; Gray, 2015; Lanius et al., 2011; Levine, 2010; Maier & Seligman, 1976, 2016; van der Kolk, 2014). Survivors can become immobilized due to having experienced an inability to control a traumatic event, complete a defensive motor response, or take action to save themselves (Crenshaw, 2006; Kearney & Lanius, 2022; Maier & Seligman, 1976, 2016; van der Kolk, 2014). This blocked action can generate loss of trust in one’s capacity to take effective action in the world leading to feelings of helplessness (Kearney & Lanius, 2022; Lanius et al., 2011). Crenshaw (2006) and van der Kolk (2014) suggested that meaningful and purposeful action that disconfirms feelings of helplessness may be essential for healing from PTSD. Promoting skills mastery can provide a disconfirming experience to feelings of learned helplessness, and support a sense of agency (Crenshaw, 2006; Maier & Seligman, 2016; Sitzer & Stockwell, 2015). Expressing painful emotions within the safe containment of artistic expression can also increase the artist’s sense of control and self-efficacy (Spiegel



et al., 2006). Through art therapy, clients learn new skills and can develop inner resources that enable them to find pathways to reach their goals. Malchiodi (2020) asserted that "supporting experiences of personal empowerment and mastery are essential to enhancing resilience through reinforcing an internal locus of control and beliefs that one can successfully address new challenges" (Chapter 1. Recovering Self-Efficacy section, para. 1). "The self is not necessarily restored through increasing the ability to tolerate reactions, but through supporting tangible, sensory, and somatic experiences of efficacy, resourcing, and resilience" (Malchiodi, 2021, para. 4).

Art therapy interventions that support a sense of agency empower people through control, choice, knowledge, and opportunity. Demonstrating how to use various art media and empowering clients to select from a choice of media can help clients exercise purposeful control, produce satisfying results, and support agency (Hass-Cohen et al., 2014; Teoli, 2019). Teoli (2019) asserted that when the therapist made art alongside group participants, the therapist's open and playful attitude empowered the participants to develop agency as they explored and experimented with the art materials. A master's research study of *Zentangle* drawings as a centering mindfulness practice found that it established feelings of safety by limiting the choice of media, producing successful outcomes, removing anxiety about having to create representational art; and supporting feelings of order and control (Kopeschny, 2016).

D'Souza et al. (2021) used artistic body mapping and storytelling with trauma-exposed children in Jamaica to empower the children to give voice to their experiences of daily violence. Themes that emerged included issues of visibility and invisibility; cultural codes and behavior; oppression and stigma related to race, class, sexuality and economic status; and resilience. This project facilitated relational connectedness through art, and enabled participants to give voice to how power, oppression, and a lack of safety affected their embodied lived experience. The project also supported resilience by providing a venue for participants to re-frame their identities by experimenting with alternative preferred endings

for their group narratives, resisting the oppressive narratives assigned to them by dominant cultural assumptions (D'souza et al., 2021). Participants expressed self-efficacy by asserting through image and story that they had the power to change the outcome of the narratives that had been imposed on them.

Hass-Cohen et al. (2014) proposed a five-step art therapy protocol in which clients made a timeline followed by artwork and a written narrative about the trauma event. In step three, clients had an opportunity to alter the drawing to create a preferred outcome if they chose. The fourth and fifth steps were drawings about their strengths, and an imagined optimistic future, respectively. Hass-Cohen and colleagues (2014) asserted that “these expressive arts activities stimulate a sense of coping, mastery, and control while supporting needed feelings of safety as well as cognitive and emotional flexibility” (p. 69). Art therapy interventions that help clients engage in meaning-making, and assert control over media and their own narratives can help clients establish an internal locus of control, improve self-confidence, and generate a positive perception of self as survivor (Hass-Cohen et al., 2014).

### **Discussion**

This capstone examined cross-disciplinary data to assess whether art therapy can help trauma survivors access an embodied sense of safety, and if so, what therapeutic mechanisms contribute to its effectiveness. The literature review started by defining the key terms: art therapy; an embodied sense of safety; integration; and trauma. This was followed by a survey of the context including trauma prevalence, traditional treatment approaches, principles of trauma-informed care, and a brief history of how psychological theory has informed art therapy. Seven therapeutic factors emerged in the literature as key themes in successful art therapy interventions for survivors of trauma.

The seven therapeutic factors in successful art therapy interventions were then assessed to ascertain how the data correlated with traumatology research in adjacent fields. The analysis revealed

ten underlying neurobiological mechanisms that can shed light on how art therapy helps survivors of trauma access an embodied sense of safety. These mechanisms are presented below.

### **Art Therapy as an Evidence-Based Treatment**

A recent meta-analysis by Morison et al. (2021) indicated that creative arts-based interventions including art therapy can definitively reduce trauma symptoms. As a result, art therapy is increasingly being recruited as an adjunctive therapy with survivors of trauma (Foster & Hagedorn, 2014; García-Reyna, 2021; Morison, et al., 2021; Sigal & Rob, 2021). Specific mechanisms by which this occurs are outlined below.

#### ***Art Therapy Facilitates the Deactivation of Neurobiological Defense Mechanisms***

An attuned therapeutic presence can engage the calming ventral vagal system, creating optimal conditions for changing neurological pathways (Geller & Porges, 2014). This is essential to the therapeutic healing process for survivors of trauma (American Psychological Association, 2017; Geller & Greenberg, 2012; Geller & Porges, 2014; Martin et al., 2000; SAMHSA, 2021; Schwarz et al., 2018; Sitzer & Stockwell, 2015; Soulsby et al, 2021). Art therapy interventions such as mirrored drawing and movement can activate the attachment system and the mirror neuron system to facilitate attunement, and the formation of a positive therapeutic alliance (Berrol, 2006; Colace, 2017; Homann, 2010; Iacoboni, 2008), thus deactivating neurobiological defense mechanisms (Geller & Porges, 2014).

#### ***Group Art Therapy Supports the Formation of Social Bonds and Collective Identity***

Recovery from traumatic stress requires the development of meaningful social connections which satisfy needs for belonging, accountability, empathy, interdependence, shared resources, intergenerational bonding, and the establishment of collective identity (Frost & Meyer, 2012; McMillan & Chavis, 1986; Schultz et al., 2016; Spiegel et al., 2006). Group art therapy offers opportunities to form meaningful social connections and a sense of group belonging (Coholic, 2011; Crenshaw, 2006; Teoli, 2019). Group art therapy can also reduce power disparities between participants and the therapist,

increase participation and trust, and elicit curiosity in participants (Teoli, 2019). For people from cultures that value collectivism, group art therapy is particularly valuable because it supports the formation of collective identity, and may be more culturally resonant than individual therapy (Block, et al, 2018; Schultz et al., 2016).

### ***Art Therapy Can Stimulate the Development of a Harmonious Relationship with Nature***

People from many cultures recognize the importance of living in a harmonious relationship with the natural world and its rhythms (Park et al., 2021; Sue et al., 2019). In these cultures, physical and mental health disorders are perceived to be the result of disconnection, imbalance, and disharmony (Liu, 2022; Perry & Winfrey, 2021). The repair of this imbalance requires the restoration of a harmonious and interconnected relationship with the natural world. Scientific evidence also supports the therapeutic value of human encounters with nature, including the alleviation of anxiety, depression, anger, fatigue and confusion; reductions in biomarkers for stress; improvements in blood pressure, and heartrate variability; and increased social cooperation and self-esteem (Park et al., 2010; Shim et al., 2022). Art therapy can stimulate the development of a harmonious relationship with the environment by using natural materials in the creative process (Malchiodi & Warson, 2021; Park et al, 2021), using natural occurrences as metaphors for healing and growth (Berger, 2020; Malchiodi & Warson, 2021), emphasizing human interdependence with nature (Creel, 2005; Warson et al., 2015) and modeling the use of media in accordance with its natural properties (Teoli, 2019).

### ***Painful Emotions Can Be Approached Indirectly Via Metaphor and Symbolism***

Creative arts therapies provide safe containment for difficult psychological material because painful feelings and memories can be approached gently and indirectly via metaphor, symbolic imagery or actions, and play (Crenshaw, 2006; Sitzer and Stockwell, 2015; Spiegel et al, 2006; Stace, 2014; Stronach Buschel & Hurvitz Madsen, 2006). Crenshaw (2006) described metaphor as a “safe haven” (p. 33) that enabled the client to approach and externalize implicit material gradually.

***Art Therapy Enables Clients to Regain Control of Emotions***

It is crucial for trauma survivors to gain emotional awareness, affect regulation skills, and the capacity to report bodily sensations before engaging in trauma reprocessing or exposure-based therapies (Hass-Cohen et al., 2014; Lanius et al., 2011). Art therapy can enable clients to regain a sense of emotional control and self-efficacy, and facilitate the reintegration of fragmentary traumatic memories (Spiegel et al., 2006). Art therapy also pairs well with mindfulness practices to stimulate interoceptive awareness, which is necessary for emotional regulation (Coholic, 2011; Coholic & Eys, 2016; Kalmanowitz & Ho, 2016, 2017; Lanius & Malchiodi, 2021; Rappaport, 2015; Selva, 2017; Sigal, 2021a). Controlled breathing, movement, and vocalization techniques are also widely used by art therapists to activate calming ventral vagal pathways in the brain (Crenshaw, 2006; Floro, 2021; Sigal, 2021a; Sitzler & Stockwell, 2015; Lanius & Malchiodi, 2021; Payne et al., 2015; Rappaport, 2013, 2015; NICABM, 2020). Guided imagery-based art interventions are particularly effective for strengthening internal feelings of safety and affect regulation (Floro, 2021; Sigal, 2021b; Sigal & Rob, 2021; Sitzler & Stockwell, 2015; Stace, 2014; Zaghrou-Hodali et al., 2008).

***Art Therapy Facilitates Access to Implicit Memory Without Reliance on Verbal Expression***

The efficacy of talk-based therapies may be compromised when the client's autonomic nervous system is chronically engaged in defense against potential threat due to the downregulation of Broca's area, a part of the left frontal lobe that is required for speech production (van der Kolk, 2014). Creative arts therapies are a compelling therapeutic choice because they facilitate access to implicit memory without reliance on verbal expression (Lusebrink & Hinz, 2016; Spiegel et al., 2006; Stronach Buschel & Hurvitz Madsen, 2006).

***Sensory-Based Treatments Including Art Therapy Can Support Sensory Integration***

Survivors of trauma may have internal visceral reactions to sensory stimuli based on past experience that can be out of sync with or disproportionate to the present level of threat or safety,

causing them to lose confidence in their own neuroceptive capacities, which may lead them to disregard sensory cues (van der Kolk, 2014). Trauma-related sensory modulation dysfunction can occur in one or more areas including touch, visual processing, movement, body position, auditory processing, oral perception, and vestibular sense (Joseph et al., 2022; Lanius & Malchiodi, 2021). Harricharan et al. (2021) argued that sensory-based interventions tap into areas of the brain associated with sensory processing and can support affect regulation, social cognition, and the reintegration of trauma material, and can even restore connectivity between midbrain structures and the prefrontal cortex. Art therapy is one such form of sensory-based intervention. Art-based bilateral stimulation and somatosensory techniques can alleviate sensory modulation difficulties, encourage functional brain connectivity, and support physiological grounding (Carney et al. 2010; Elbrecht, 2023; Kearney & Lanius, 2022; NICABM, 2017; Ogden & Fisher, 2015; Ogden & Goldstein, 2022; Pandev-Girard, 2022; Peper et al., 2017; Warson, 2021a, 2021b).

### ***Art Therapy Has An Enlivening Effect***

Restoring the capacity for trauma survivors to access positive emotional states is as important as expanding tolerance for emotional distress (Malchiodi, 2020). Positive emotions broaden attentional focus, scope of awareness, and thought-action tendencies, and build resources for survival (Fredrickson, 2013). They also alleviate stress-reactivity (Ong et al., 2006), and trauma-related cardiac stress (Fredrickson, 2013; McCraty & Zayas, 2014). Creative arts therapies are a particularly effective conduit for generating positive emotions, and social synergy (Malchiodi, 2020; Spiegel et al., 2006), and are generally experienced as pleasurable and enlivening (Coholic, 2011; De Petrillo & Winner, 2005; Sitzer & Stockwell, 2015). This leads to lower therapy attrition rates, increased self esteem, social competence, improved mood and attentional focus, and better affect regulation skills (Coholic, 2011).

### ***Art Therapy Mitigates Feelings of Helplessness Through Purposeful Action and Skills Mastery***

Learned helplessness is often a byproduct of trauma exposure when people lose confidence in their capacity to take effective action to protect themselves from danger (Crenshaw, 2006; Gray, 2015; Kearney & Lanius, 2022; Lanius et al., 2011; Levine, 2010; Maier & Seligman, 1976, 2016; van der Kolk, 2014). Art therapy can provide opportunities for meaningful and purposeful action and skills mastery, which can mitigate feelings of helplessness (Crenshaw, 2006; Sitzer & Stockwell, 2015; van der Kolk, 2014), and support a sense of agency and empowerment (Crenshaw, 2006; Kearney & Lanius, 2022; Sitzer & Stockwell, 2015).

### ***Art Therapy Empowers Participants Through Control, Choice, Knowledge and Opportunity***

Art therapy empowers people through the exercise of purposeful control, choice, knowledge, and opportunity in a present-focused here-and-now context (Hass-Cohen et al., 2014; Kopeschny, 2016; Malchiodi, 2020; Teoli, 2019). It also supports resilience and agency by providing a way for participants to express their embodied reality, practice coping skills, reframe their identity by experimenting with alternative preferred endings, and affirm through image and story that they have the power to change future outcomes (D'Souza et al., 2021; Hass-Cohen et al., 2014).

### **Implications**

#### ***The Urgent Need for Proficiency in Providing Trauma-Informed Care***

More than half of the world's population has been exposed to potentially traumatizing experiences that can have devastating physical and mental health consequences (Benjet et al., 2016; Felitti et al., 1998; Forman-Hoffman et al., 2016; SAMHSA, 2014, 2021). Trauma exposure can disrupt somatic rhythms, hormonal homeostasis, threat perception, and autonomic regulation, and can disturb intricate neurological systems such as sensory perception, executive function, and memory formation (Haglund et al., 2007; Homann, 2020; van der Kolk, 2014). Symptoms resulting from the activation of threat defense mechanisms can lead to physical illness, mental health disorders, and the engagement of maladaptive coping mechanisms (Felitti et al., 1998; Forman-Hoffman et al., 2016; SAMHSA, 2014, 2021;

Sigal 2021a;). Given the high probability that clients who seek mental health services have been exposed to at least one traumatic event that may have adversely affected them or someone close to them, it is prudent for mental health clinicians to screen for trauma exposure, and to understand how trauma exposure can potentially play a role in the diagnostic profiles of the clients we serve. It is also recommended that therapists become proficient in providing trauma-informed care.

The findings of this literature review are important because the data attest that art therapy is a compelling therapeutic choice that can reduce trauma symptoms, and enable trauma survivors to establish an embodied sense of safety. In light of these conclusions, this paper proposes that art therapy be recognized among other evidence-based therapies as a mainstream therapeutic approach for the treatment of PTSD and other forms of traumatic stress. Art therapy can be used independently, or in conjunction with TF-CBT, EMDR, or Group Therapy (Foster & Hagedorn, 2014; García-Reyna, 2021; Malchiodi & Warson, 2022; Morison et al., 2021; Sigal & Rob, 2021). Art therapy also pairs well with other creative arts therapies (Malchiodi, 2020; Morison et al, 2021), mindfulness and breath control techniques (Coholic, 2011; Coholic & Eys, 2016; Floro, 2021; Kalmanowitz & Ho, 2016, 2017; Rappaport, 2013, 2015; Selva, 2017; Sitzer & Stockwell, 2015); sensory and kinesthetic approaches (Elbrecht, 2023; Kearney & Lanius, 2022; Levine, 2010; Malchiodi & Warson, 2022; Ogden & Fisher, 2015; Warson, 2021b); and ecotherapy (Berger, 2020; Creel, 2005; Malchiodi & Warson, 2021).

Art therapy should also be recognized with professional training and licensure. As of the writing of this capstone, the American Art Therapy Association website (AATA, 2022) reported that professional art therapy is licensed in just fifteen US states and the District of Columbia. Many other countries also lack professional training programs, and licensure for art therapists. Professional art therapy training and licensure is important because it affirms the legitimacy of art therapy as a mental health and human services profession, it supports regulatory processes, it provides title and practice protection, and it improves accessibility by increasing the potential for insurance coverage (AATA, 2022). Finally, it is



recommended that funding be allocated to further research into the neurobiological mechanisms underlying the effectiveness of art therapy.

### **Limitations**

One limitation of the existing research was that most of the art therapy literature used small sample sizes with convenience samples, rather than using randomized controlled samples. This could potentially have compromised the reliability of those studies. Also, much of the research in the field of art therapy has been conducted with white European and American subjects, which may limit the generalizability of the findings. As the field matures, additional research including subjects from other cultural perspectives will expand and enrich the data. Additionally, since I am a white American woman who has spent 40% of my life working with survivors of trauma in Southeast Asia, and I, myself, am a survivor of trauma, my own positionality and priorities may have biased the outcomes of the study. Another limitation was that few of the research studies directly examined the underlying neurobiological mechanisms for art therapy's effectiveness. The cross-disciplinary approach to trauma studies used for this literature review attempted to bridge that gap by considering how research from adjacent fields can offer hypotheses about the mechanisms for the effectiveness of art therapy. Ultimately, however, research from neighboring fields cannot provide definitive answers about art therapy, and more art therapy-specific research is warranted.

### **Conclusion**

This literature review sought to determine whether art therapy has been effective in helping survivors of trauma access an embodied sense of safety, and if so, what mechanisms contributed to its efficacy. Art therapy was clearly found to support a felt sense of safety, and seven primary therapeutic factors emerged; therapeutic alliance; group belonging; synchrony with the natural world; affect regulation; sensory integration; a positive emotional state; and a sense of agency. These seven

therapeutic factors were analyzed to determine how the data correlated with other traumatology research in adjacent disciplines. The data revealed ten underlying neurobiological mechanisms that can illuminate how the therapeutic factors found in successful art therapy interventions support an embodied sense of safety for trauma survivors. It is expected that as new research emerges, evidence will continue to accumulate to further clarify the mechanisms undergirding the healing benefits of the ancient practice of creative arts. People know from experience that engaging in creative expression feels good. Research is now beginning to shed light on why that is the case.

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