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Phenomenological Reflections of Trauma Survivors on Healing through Yoga

A Master's Thesis Presented to the Faculty of the Graduate Program in Occupational
Therapy Ithaca College

In partial fulfillment of the requirements for the degree of Master of Science

Abigail Chirokas
May 2021


Ithaca College
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CERTIFICATE OF APPROVAL

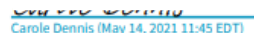
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Abigail Chirokas
submitted in partial fulfillment of the requirements of the degree of Master of Science
in the Department of Occupational Therapy, School of Health Sciences and Human
Performance, at Ithaca College has been approved.

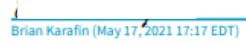
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Abstract

A hermeneutic phenomenological approach was used to explore the effects of trauma on occupational participation and well-being and how yoga impacts healing. Three trauma survivors with yoga practices consisting of asana (postures), pranayama (breath control), and meditation shared their stories. Interviews yielded compelling accounts of how yoga has helped participants manage the evolving effects of trauma and open towards embodied healing. The major theme *embodiment* was arrived at with constituent themes: *choices, opening towards possibilities, connection, the power of breath, yoga as a microcosm*. Findings suggest opportunity for integration of yoga and occupational therapy in a holistic approach to trauma.

Acknowledgements

I would like to offer a moment of gratitude for my research team who has supported me through this project. You have brought immense encouragement, guidance and varied perspectives throughout this process and it has been a pleasure collaborating with each of you. Thank you to my advisor and qualitative research connoisseur, Carole Dennis, for helping me every step along the way and for taking on this commitment during your last year at Ithaca College and into your retirement. Thank you to Michelle Bradshaw, for helping me to (very necessarily) narrow the scope of this study and for offering *Occupational Therapy, Complementary Health Approaches, and Integrative Health*. This course revitalized my passions and helped bridge the gaps between my personal and professional interests as reflected in this project. Thank you to Brian Karafin, for the spaces you have cultivated in your classes and office for honest investigation of the self and the collective, for the many borrowed books and hours-long conversations in the Illuminati Palace, and for continuing to be an impactful mentor for me.

Additionally, I would like to thank my home and mentors at Healing House in Cusco. This project would not have the same depth without having had the most transformative experience completing my yoga teacher training with you partway through.

Dedication

To my three research participants: I am deeply inspired by each one of you and am humbled that you felt safe to share your stories with me. Thank you for your generosity and openness, without which this project would not be possible. Your insights have already had profound effects on my relationship to my own yoga practice and my approach to occupational therapy.

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Chapter I: Introduction

Background

Nearly three quarters of individuals will be exposed to trauma in their lifetime (Benjet et al., 2016). The global prevalence of trauma paired with its potential for “lasting adverse effects on the individual’s functioning and mental, physical, social, emotional or spiritual well-being” (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014, p. 7) reveals a significant public health threat (Magruder, McLaughlin, & Elmore Borbon, 2017). This threat is reinforced by research indicating that Adverse Childhood Experiences (ACEs), a range of exposures most often related to childhood abuse, neglect, and household dysfunction, are associated with disease and high-risk health behaviors in adulthood (Felitti et al., 2019; Brown, Masho, Perera, Mezuk, & Cohen, 2015). Trauma entails being overwhelmed beyond the capacity to cope (SAMHSA, 2014; AOTA, 2018) in the onset of a traumatic event, which is defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as “exposure to actual or threatened death, serious injury or sexual violence” (*American Psychiatric Association*, 2013, p. 271). Other events or circumstances that may incite trauma include but are not limited to exposure to violence in the home or community, life-threatening illness, grief and loss, natural disaster, involvement in war, life-threatening illnesses, and microaggressions and oppression due to race, sexuality, and gender identity (Ballard & Kripalani, 2016; Nadal, 2018; SAMHSA, 2014; Torchalla, Killoran, Fisher, & Bahen, 2018). About 4% of people who have experienced a traumatic event

are diagnosed with posttraumatic stress disorder (PTSD), which requires more detailed criteria for symptomology to be diagnosed (Torchalla et al., 2018).

Whilst trauma and PTSD rates are high with war veterans, trauma is not limited to this population. Upon transitioning from war veterans to victims of abuse in a clinical setting, Dr. Bessel van der Kolk found that “For many people the war begins at home... for every soldier who serves in a war zone abroad, there are ten children who are endangered in their own homes” (2014, p. 21). One of the most common forms of trauma throughout the lifespan is sexual violence. According to Breiding et al. (2014), it is estimated that 19% of women and 2% of men have been raped in their lifetime in the United States. An estimated 44% of women and 23% of men have experienced sexual violence. (Breiding et al., 2014; Nadal 2018). Sexual assault rates amongst transgender folks may be high as 66% and transgender women experience 50% of hate crimes against lesbian, gay, bisexual, transgender, and queer (LGBTQ+) people (Ballard & Kripalani, 2016; Office for Victims of Crime, 2014). Gay men and lesbian and bisexual women experience higher rates of sexual violence than their heterosexual counterparts (Black et al., 2011). Systemic inequality results in greater risk of trauma such as sexual violence among Black, Indigenous, and People of Color (BIPOC), especially women and girls of color (Spires et al., 2017).

Abuse and trauma, whether experienced in childhood or adulthood, may result in long term effects that influence an individual’s physical health, quality of life, community integration, social participation, and the ability to develop and maintain meaningful relationships (Bisson, 2007; Torchalla et al., 2018). Trauma survivors are

more likely to develop comorbid psychiatric conditions such as PTSD, anxiety disorders, depression, and substance abuse, as well as physical health issues such as obesity, heart disease, chronic pain, and sleep disturbances (Danielsson & Rosberg, 2015; Rhodes, 2015; Torchalla et al., 2018). Psychiatric interventions are typically at the forefront for treating trauma and PTSD symptoms, however it is likely that medications “do not address the deep physiological, psychological and sociological disintegration and dysregulation characteristic of PTSD” (Jindani & Khalsa, 2015, p. 395). There may also be limitations associated with talk therapy because trauma survivors often find themselves unable to verbalize their internal experiences and feelings (Edgelow, MacPherson, Arnaly, Tam-Seto, and Cramm, 2019), which van der Kolk defines as alexithymia (2014). This may be attributed to the complex neurological impacts of trauma that affect several areas of the brain involved with arousal, stress response, impulse control, motivation, emotions, memory, and sensory and motor functions (Alers, 2014). Additionally, talk therapy accesses the left brain and does not necessarily encourage integration of both hemispheres which may become imbalanced due to trauma (Alers, 2014). This suggests that a multidisciplinary approach will best serve a client experiencing the manifold layers of trauma (Torchalla et al., 2018).

The World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948, para. 1). Each of these aspects of health may be impacted by trauma, affecting the individual who has undergone the traumatic experience as well as their relationships with others, as social interactions and capacities for intimacy may be

altered (Edgelow et al., 2019; Rhodes, 2015; SAMHSA, 2014). According to occupational therapy principles, participation in meaningful and satisfying occupations, or everyday life activities, is inextricably tied to well-being (AOTA, 2020; Hammel, 2017).

Occupations, particularly those related to self-care, productivity, and leisure, often become impacted by trauma (Edgelow et al., 2019; Torchalla et al., 2018). This may be attributed to the many accompanying symptoms of trauma including dysregulated arousal and anxiety; nightmares and sleep disturbances that affect alertness, concentration, mood, and energy; re-experiencing traumatic memories that occur spontaneously or are elicited by specific stimuli that may result in avoidances of related triggers (Alers, 2014; Edgelow et al., 2019; Rhodes, 2015; van der Kolk, 2014).

Dissociation may manifest as a coping mechanism for the discomfort that arises in the physical body, causing an individual to split off from reality and consequently from their body, affecting daily functioning, quality of life, and engagement in relationships (Fette, Lambdin-Pattavina, & Weaver, 2019; Richardson, 2019). Other coping mechanisms include self-harm and substance abuse (Briere & Spinazzola, 2015). Occupational therapists may address barriers to optimal occupational participation and introduce ways to cope with adverse emotional and physical symptoms that arise from the persistence of trauma within the body and the brain, going beyond the management of physical symptoms to focus on developing deeper levels of resilience, wellness, and self-awareness throughout all stages of the recovery process (Fette et al., 2019; Torchalla et al., 2018).

Allopathic (i.e., Western) medical providers tend to treat trauma through pharmacological interventions. This may be a beneficial component to trauma recovery when used as an adjunct to other therapies, but other challenges may arise when medication is used alone to treat symptoms whilst neglecting the deeper physiological, psychological, and spiritual layers that may be affected by trauma (Basset, Tsosie, & Nannauck, 2012; Jindani & Khalsa, 2015; van der Kolk, 2014). Integrative health practices may be considered to address the complexities of the manifestations of trauma. Complementary health approaches and integrative health (CHAIH) refers to a range of services, products, and practices that may be used alongside conventional medical approaches to health and wellness (Bradshaw, 2017; George, Avila, Speranger, Bailey, & Silvers, 2018). CHAIH “puts the patient at the center and addresses the full range of physical, emotional, mental, social, spiritual and environmental influences that affect a person’s health” (“What is Integrative Medicine?,” 2011). This definition aligns with the values of occupational therapy practice, which emphasize the multidimensional contexts of an individual and the ways in which they impact occupational participation, as outlined in the *Occupational Therapy Practice Framework: Domain and Process* (OTPF) and AOTA supports the use of CHAIH as a component to occupational therapy practice (Bradshaw, 2017; AOTA, 2020). This seems appropriate as occupational therapy is a field concerned with providing client-centered care and treating individuals as holistic beings (Mthembu, Roman, & Wegner, 2016). However, like other Western medical disciplines, occupational therapy is not immune from treating individuals in isolated parts.

Yoga is one of the most commonly used CHAIH approaches (Clarke, Barnes, Black, Stussman, & Nahin, 2018). Yoga, which derives from the Sanskrit word *yuj* meaning “to yoke” or bring unity to the multiple layers of one’s being, is a mind-body-spirit practice that has the capacity to “engage the entire organism in the process of psychological healing” (Jindani & Khalsa, 2015, p. 399). Patanjali’s Yoga Sutra describes the philosophy of yoga in reference to Ashtanga: the eight limbs of yoga which outline moral, ethical, and spiritual guidelines for living a purposeful and meaningful life, as depicted in Figure 1 (González & Eckstrom, 2016; Satchidananda, 2012). Asana is the third limb which is comprised of the physical postures that help bring the body into balance and is the mainstream association with yoga in the United States (Kaivalya & van der Kooij, 2010).

Research indicates that yoga may alleviate symptoms of mental health disorders such as anxiety and depression, as well as chronic physiological conditions such as high blood pressure, inflammation, chronic pain, nervous system dysregulation, and digestive challenges (Chugh-Gupta, Baldassarre, & Vrkljan, 2013; Danielsson & Rosberg, 2015; Büssing, Michalsen, Khalsa, Telles, & Sherman, 2012). Among the lesser discussed effects of yoga are energetic effects and spiritual effects which may bring about a sense of connection within one’s subtle body and with the universe (Little, 2016; Feuerstein, 2013). Yoga has been cited as a safe way for individuals to look inward and engage the mind, body, and spirit in ways that can be supportive for trauma survivors (Rhodes, 2015; van der Kolk, 2014).

According to Patanjali's yoga sutra, asana is intended as a practice for the cessation of the fluctuations of the mind and was traditionally used as preparation for seated meditation to still the mind yet is the mainstream association with yoga in the United States (Moonaz, 2016). This overemphasis and obsession with asana limits attention to all the other components of an embodied yoga practice and makes the practice inaccessible for many (Moonaz, 2016; Thomas, Warren-Findlow, & Webb, 2019). The use of yoga in occupational therapy literature tends to be reductionistic: There is often a heavy focus on yoga as a physical practice to support rehabilitation outcomes without much distinction or reasoning for the selected lineage and components of yoga used in the study (Aboagye, Karlsson, Hagberg, & Jensen, 2015; Adler, Van Puymbroeck, Portz, & Schmid, 2017; Schmid, Miller, Van Puymbroeck, & DeBaun-Sprague, 2014; Yu & Mathiowetz, 2014). This focus does not embrace the opportunity to generate a larger discussion of the mind-body-spirit connection as affected by yoga. Spirituality is a major part of holism and is highlighted as a client factor in the OTPF that affects participation in meaningful occupations (AOTA, 2020). However, spirituality is largely overlooked in occupational therapy education and whilst most practitioners view spirituality as an important determinant of health, they feel unprepared to address clients' spiritual needs (Misiorek & Janus, 2018; Morris, 2013; Mthembu et al., 2016).

Current research indicating benefits of yoga occasionally describes how yoga may strengthen the mind-body connection, but is limited in its exploration of the potential spiritual effects of yoga that could make a crucial difference in healing from

trauma (Khursheed & Shahnawaz, 2020). Trauma-informed care in occupational therapy remains an emerging area of practice and the cross-sections between yoga and occupational therapy in trauma-informed care are not yet established. Occupational therapy may have the potential to bridge these gaps by gaining an understanding of how yoga may develop and strengthen the mind-body-spirit connection to promote overall function and well-being for trauma survivors.

Most trauma research exists in social work, counseling, and clinical psychology. Adding depth to the knowledge base of occupational therapy with this population necessitates learning from these fields to incorporate applicable theories and treatment approaches into practice. The emotional processing theory posits that exposure to trauma alters neural networks connected to fear stimuli, resulting in overactivity and maladaptive responses to trauma-related associations (Rauch & Foa, 2006; Torchalla et al., 2018). Porges's polyvagal theory posits that improved vagal regulation is associated with feelings of safety, calmness, emotional regulation, adaptability, and resilience (Doehring, 2019; Streeter, Gerbarg, Saper, Ciraulo, & Brown, 2012; Sullivan et al., 2018a). This theory can also be applied to access the benefits of breathing exercises, or pranayama, for symptoms associated with trauma (Breit, Kupferberg, Rogler, & Hasler, 2018). These theories may complement traditional occupational therapy theories and models. For example, the Person-Environment-Occupation (PEO) Model uses a client-centered approach to consider the complexities of the relationship between personal factors, environmental and systemic factors, and occupational factors as influenced by different stages in the lifespan (Law et al., 1996). This could be effective when combined

with the emotional processing theory to consider how trauma-related avoidances affect an individual in these domains as well as how these factors may enhance or limit occupational participation and well-being. This adds a more comprehensive view of clients and trauma-related barriers to occupational participation to inform areas of intervention.

Purpose of Study

The purpose of this study was to gain insights from the narratives of trauma survivors who have maintained a regular yoga practice in order to determine their perceptions of the effects that yoga has on their occupational participation and overall well-being. This was intended to provide a body of knowledge to deepen and expand conversations regarding trauma-informed care and the use of yoga as an intervention within occupational therapy practice. This study sought to generate thoughtful conversations connecting the therapeutic use of yoga for trauma survivors as related to occupational therapy practice and guide future studies further exploring these topics.

Research Questions

What are trauma survivors' perceptions of the effects of (1) trauma on well-being and occupational participation, and (2) yoga on well-being and occupational participation?

Definition of Terms

Yoga is a mind-body-spirit practice with several different paths meant to lead the practitioner to achieve union with the Self and the Universe. Patanjali's sutra describes the eight limbs of yoga philosophy (Muktibodhananda, 2013; Ram,

2020): yama (moral standards), niyama (self-discipline), asana (postures), pranayama (breath control), pratyahara (withdrawal of the sense), dharana (concentration), dhyana (meditation), samadhi (ecstasy).

Trauma is an “individual’s response to extreme stress that overwhelms the capacity to cope” and has long term adverse effects on physical, mental, emotional, social, and/or spiritual well-being (AOTA, 2018, p. 1; SAMHSA, 2014).

Traumatic event is the instance(s) in which an individual undergoes trauma as defined in broad categories by the DSM-5 as “exposure to actual or threatened death, serious injury or sexual violence” (*American Psychiatric Association, 2013, p. 271*). This was the definition used as inclusion criteria to refine this research study; however, it is simplistic as traumatic events are subjective and encompass a much larger range of events.

Dissociation is a common symptom of trauma that entails feeling cut off from one’s body and surroundings as a protective mechanism amidst overwhelming experiences but may become maladaptive and habitual in the aftermath of trauma (van der Kolk, 2014).

Occupation is any life activity, including activities of daily living (ADL), instrumental activities of daily living (IADL), rest and sleep, education, work, play, leisure, and social participation, that is meaningful to the individual, brings about satisfaction and enhances self-esteem (AOTA, 2020; Trombly Latham, 2014)

Occupational participation is one’s involvement and fulfillment of occupations that is

socially and personally relevant and significant to one's life experience (Larsson-Lund & Nyman, 2017).

Occupational justice is "the right of every individual to be able to meet basic needs and to have equal opportunities and life chances to reach toward her or his potential but specific to the individual's engagement in diverse and meaningful occupation." (Wilcock & Townsend, 2009, p. 193).

Delimitations

The DSM-5's definition of trauma as "exposure to actual or threatened death, serious injury or sexual violence" was used as inclusion criteria for this study (*American Psychiatric Association*, 2013, p. 271). This narrowed the focus of the study, as there is a multitude of ways in which one can be exposed to trauma. However, this definition was not inclusive for individuals who have experienced trauma in ways outside of this definition. Participants were not asked to disclose the type of trauma(s) they had endured. This was to prevent triggering participants by asking them to relive traumatic experiences. The interviews were approached with the intention of creating space for participants to share what they felt comfortable sharing, which was important for ensuring safety and willingness to be vulnerable. However, this limits generalizability of results.

Limitations

Despite measures to limit researcher bias, the primary researcher's passions about the topics may have created subconscious bias that influenced the results. Additionally, the participants' perceptions may have been affected by memory.

Generalizability is naturally limited due to the small sample size of three participants. Plus, participants were selected by word of mouth on a volunteer basis as opposed to random sampling. Demographic data were not requested from the participants, which limits discussion of factors, such as socioeconomic status and race, that may affect one's ability to access yoga and mental health resources.

Chapter 2: Literature Review

In this literature review, I have chosen the following topics to delve into the disintegration between the mind, body, and spirit in the aftermath of trauma and the impact yoga may have upon those areas. I will begin by discussing the *mind-body connection* to draw attention to the interplay of mental and physical health effects of trauma. This paves way for the investigation of yoga as a mind-body practice. *Spirituality* will be then be discussed, as the mind-body connection appears to be more commonly accepted in health care practices, excluding the spiritual component that forms the mind-body-*spirit* connection. The connection between spirituality and occupational therapy will be outlined and the role of spirituality in trauma will be expanded upon. The effects of trauma on an individual's being (i.e., mind, body, and spirit) will then translate to *the effects of trauma on occupational participation*. This will describe ways in which trauma may affect functioning in daily occupations and roles. *Trauma-informed care in occupational therapy* will be outlined to explore the role of occupational therapy in working with trauma survivors. Finally, *yoga for trauma survivors* will be reviewed to further the conversation of the role of yoga in healing from trauma and improving satisfaction in meaningful occupations.

Mind-Body Connection

In the discussion of the effects of trauma, mental and physical health effects are often separated. This corresponds with Cartesian mind-body dualism, which views the mind and body as distinctly different, and is characteristic of allopathic medicine (Ergas, 2014; Mehta, 2011). This mode of thinking limits the ability for healthcare providers to

view individuals through a holistic lens needed to provide comprehensive trauma treatment.

The presence of trauma is not limited to the onset of a traumatic event, but rather lingers in the systems of the body and brain long after exposure. Trauma has the capacity to leave imprints on the mind and body that have lasting effects on one's functioning and ability to cope (Rhodes, 2015). This can be seen in the interplay of physiological effects (e.g., low parasympathetic nervous system activity, increased cortisol, irritable bowel syndrome, chronic pain, sleep disturbances, heart disease) and psychological effects (e.g., chronic stress, dissociation, numbness of responsiveness, re-experiencing of traumatic event) that may persist in trauma survivors and affect day-to-day functioning (Emerson, Sharma, Chaudhry, & Turner, 2009; Jindani & Khalsa, 2015; Sassi, 2011; Torchalla et al., 2018; White et al., 2010).

Sensory processing may become dysregulated in the aftermath of trauma (Kaiser, Gillette, Spinazzola, 2010; Payne, Levine, & Crane-Godreau, 2015). This contributes to body awareness challenges. Dissociation takes individuals out of their bodies in the face of trauma and long after. This is sometimes described as a "splitting" between the mind and body. Multiple sensory systems work together to inform body awareness, which is defined by Mehling et al. (2011) as "the subjective, phenomenological aspect of proprioception and interoception that enters conscious awareness and is modifiable by mental processes" (p. 1). Proprioception refers to the awareness of one's body in space, as it helps individuals orient themselves in relationship to their environment (Harrison, Kats, Williams, & Aziz-Zadeh, 2019; Morley,

2001; Payne et al., 2015). Interoception is responsible for detection, attention, and overall awareness of internal conditions of the body (Bennie, 2020; Khalsa, Feinstein, & Paulus, 2018; Payne et al., 2015; Rhodes, 2015; Schauder, Mash, Bryant, & Cascio, 2015). Alexithymia, a symptom of trauma that causes difficulty recognizing and verbalizing internal emotions and physical sensations, is linked to interoceptive difficulties (Shah, Hall, Catmur, & Bird, 2016).

Top-down processes are conscious activities initiated in the cerebral cortex; bottom-up processes are subconscious stimulations of receptors in the body (Taylor, Goehler, Galper, Innes, & Bourguignon, 2010). Mind-body practices such as yoga integrate both top-down and bottom-up processes, creating mutual communication between the brain and body that can positively impact physical and mental health (Sullivan et al., 2018a; Taylor et al., 2010).

Yoga is a unique tool when it comes to trauma in that it “does not draw a clear line between body and mind, and as such it constitutes a vehicle towards stepping away from a Western-Cartesian dualistic perception” (Ergas, 2014, p. 79). For trauma survivors who experience dissociation, yoga may offer a refreshing and unfamiliar experience of uniting the mind and body. Research indicates that yoga may help harmonize the mind-body connection, cultivate body awareness, discourage negative coping mechanisms, and alleviate depressive and dissociative symptoms (Büssing et al., 2012; Justice, Brems, & Ehlers, 2018; Rhodes, 2015; Rhodes, Spinazzola, & van der Kolk, 2016). Yoga and intentional movement have been seen to help individuals with depression, which is often comorbid with trauma, to feel more embodied in the world

and open towards life (Aho, 2013; Danielsson & Rosberg, 2015). Büssing et al. (2012) conducted a review of research that suggests yoga may be beneficial for wide range of mental health challenges (e.g., PTSD, anxiety and anxiety disorders, stress, fatigue, depression, overactive nervous system) and physical health challenges (e.g., cardiopulmonary, metabolic, and musculoskeletal conditions).

Spirituality

Whilst the mind-body connection has received attention in related literature, fewer sources acknowledge the spiritual component of one's being that comprises the mind-body-spirit connection. This is exemplified in a reluctance amongst occupational therapists to incorporate spirituality into a holistic and client-centered approach to therapy (Misiorek & Janus, 2018; Morris, 2013; Mthembu et al., 2016). This could be due to the lack of curricular inclusion of spirituality in occupational therapy education causing uncertainty, fears surrounding offending a client, and/or underdeveloped spirituality preventing the therapist from being able to connect and relate in those ways.

Spirituality is difficult to define, as it is subjective and evolving. Seaward and Lissard noted some commonalities amongst human spirituality (2020, p. 103):

1. an insightful relationship with oneself and others
2. a strong personal value system
3. fulfillment of a meaningful purpose to one's life
4. curiosity towards the mysteries of life.

Spirituality exists internally and is manifested externally. In that way, spirituality has the capacity to permeate all occupations when performed in a meaningful, intentional way

(Hemphill, 2020). This impacts *what* occupations an individual participates in, *how* the individual participates in those occupations, and the meaning they bring about to the individual (AOTA, 2020; Hemphill, 2020). Many health professionals look to the World Health Organization's definition of health, which does not currently include spirituality as a marker of health (WHO, 1948). Hemphill (2020) highlights spiritual quality of life as being "achieved through relationships that promote interconnectedness among humans, the world, and a transcendent entity (or higher power)" (p. 3). Ignoring spiritual health and well-being in the conversation of trauma may be neglecting a critical layer to the healing process.

Posttraumatic growth refers to positive personal changes that arise in some individuals following trauma; there is evidence that spirituality is a strong predictor of posttraumatic growth (Khursheed & Shahnawaz, 2020; Werdel, Dy-Liacco, Ciarrocchi, Wicks, & Breslford, 2014). Moreover, Khursheed and Shahnawaz (2020) make the distinction that spirituality is positively correlated with self-compassion, which appears to lead to posttraumatic growth. In this way, yoga as a spiritual practice may present a pathway to posttraumatic growth through practicing Ahimsa, an ethical guideline in Patanjali's eightfold path of yoga that emphasizes non-violence and compassion for the self and others (Muktibodhananda, 2013).

Spirituality can be an area of support or challenge for trauma survivors. It can be a supportive coping mechanism that helps individuals heal, find meaning and purpose in life, and experience posttraumatic growth (Starnino, 2016). Conversely, it can be an area of struggle that causes an overwhelming sense of meaninglessness and questioning of

belief systems (e.g., beliefs in the Divine or higher power), which is linked to a higher risk for mental health disorders (Park, Currier, Harris, & Slattery, 2017; Starnino, 2016). Spiritual struggles are linked to poor mental health outcomes, and trauma underlies most mental health conditions, yet the link between trauma and spirituality is not well researched at this time (SAMHSA, 2014; Starnino, 2016). If an individual's being is comprised of mind, body, and spirit, disconnection from spirit following trauma may result in a disintegration of a part of themselves and a potential pathway to healing. Although additional research is needed, there is growing evidence that spirituality can be a positive coping tool and that spiritual health may be a predictor of mental health following trauma (Bryant-Davis et al., 2012; Park, Currier, Harris, & Slattery, 2017; Starnino, 2016).

Effects of Trauma on Occupational Participation

Symptoms arising from the disruption of the mind-body-spirit connection may impact one's engagement in meaningful occupations, highlighting the role of occupational therapy with this population. AOTA defines trauma as a response to extreme stress such as "witnessing or experiencing adverse childhood experiences, neglect, domestic abuse, natural disasters, military combat, or violent or sexual assault" beyond the individual's ability to cope and function in everyday life roles, routines, and occupations (AOTA, 2018, p. 1). Trauma can occur at any point in the lifespan and symptoms may persist and evolve with time. When trauma occurs in childhood, it tends to be processed on a sensory level with minimal cognitive understanding (Fraser, MacKenzie, & Versnel, 2019). Childhood trauma is associated with somatization, which

causes somatic symptoms (e.g., fatigue, headaches, stomachaches, musculoskeletal pain) accompanying psychological and behavioral challenges in childhood and adulthood (Kroska, Roche, & O'Hara, 2018). Effects demonstrated in childhood include sensory processing, emotional regulation, motor planning, and interpersonal difficulties affecting participation in age-related occupations, such as ADLs, school, and social interactions (Fraser, MacKenzie, & Versnel, 2017; Fraser et al., 2019).

Whether experienced in childhood, adolescence, or adulthood, trauma has the capacity to disrupt daily life functioning in age-related roles and occupations. The occupations one participates in may be altered when there are avoidances due to trauma-related stimuli (Torchalla et al., 2018). Trauma affects nervous system regulation, which may cause dysfunctions in regulating and managing one's own internal and external experience (Briere & Spinazzola, 2005). This, combined with mood disturbances and challenges coping with emotions and triggers, has the capacity to affect satisfaction and participation in most, if not all, everyday life roles, routines, and habits. Occupations related to self-care, productivity, and leisure are most affected by trauma (Edgelow et al., 2019). Social interactions and capacity for close, trusting relationships are also negatively impacted (AOTA, 2015; Briere & Spinazzola, 2005). Whilst certain occupations tend to be affected across the lifespan, symptoms of trauma can manifest differently across evolving life roles and contexts. For example, school performance may be significantly impacted in youth and in those who pursue higher education. Occupations that may be relevant in adulthood, such as work performance, intimacy, parenthood, etc. are likely impacted by trauma. This demonstrates a need for

occupational therapy services to address the manifold ways trauma may affect occupational participation.

Trauma-Informed Care in Occupational Therapy

In recent years, there has been an increase in conversation surrounding trauma-informed care across a variety of systems, including the health care system and delivery of mental health services (Becker-Blease, 2017). Edgelow et al. indicated the importance of providing trauma-informed care to all clients and populations receiving occupational therapy services, regardless of if they are being treated for trauma, as evidence is emerging that trauma may underlie many health conditions that are already being treated by occupational therapists (2019). Universal inclusion of trauma-informed care corresponds with a public health approach to enhance accessibility at a whole population level (Fette, Lambdin-Pattavina, & Weaver, 2019). Education is needed for occupational therapists to apply trauma-informed principles for all clients to create safe, inclusive spaces for everyone. Targeted approaches may be implemented as intensive services for individuals demonstrating functional concerns due to trauma (Fette et al., 2019). Thus, occupational therapists can implement trauma-informed care on a population level in any setting, and on an individual level when specifically treating functional implications of trauma in a mental health setting.

Occupational therapists have a role in supporting health-promoting routines, role fulfillment, coping skills and symptom management, and participation in occupations affected by trauma (Torchalla et al., 2018). PTSD is the second leading condition responsible for role disruption in terms of days missed at work (Alonso et al.,

2011). This highlights the role of occupational therapists in helping trauma survivors return to work and resume meaningful roles (Edgelow, Harrison, Miceli, & Cramm, 2020).

As the world becomes more trauma-informed and health care professions such as occupational therapy begin to implement TIC, Becker-Blease (2017) discusses the importance of recognizing the links between trauma and systems of oppression and giving voice to trauma survivors. She advises “Without this critical engagement with the systems behind the trauma-informed movement, there is a risk of perpetuating the same victim-blaming, silencing, shaming, and retraumatizing practices ‘simply by another name’” (Becker-Blease, 2017, pp. 131-132). It is also crucial for yoga teachers to engage in these ways and amplify the voices of trauma survivors when creating spaces, so as to prevent creating a triggering atmosphere for individuals who may be looking to find healing through yoga.

Yoga for Trauma Survivors

Van der Kolk (2014) outlines how yoga fosters interoception by providing an opportunity for trauma survivors to return to their inner world and become attuned with their senses again. Yoga can teach practitioners to become aware of their experiences, then let them go (van der Kolk, 2014). Yoga may be particularly beneficial as an adjunct therapy to support recovery for sexual assault survivors by helping them manage anxiety, regulate emotions, regain control of the breath, and learn to feel safe in the present moment (Nicotera & Connolly, 2020; Stevens & McLeod, 2019). As

explained by Doehring (2019), body-centered practices such as yoga may help trauma survivors relearn how it feels to be safe in the body, which is needed to later search for meaning. This idea corresponds with the polyvagal theory, which posits that improved vagal regulation is associated with feelings of safety, calmness, emotional regulation, adaptability, and resilience (Doehring, 2019; Streeter et al., 2012; Sullivan et al., 2018a).

A randomized control trial incorporating a 10-week weekly yoga program for women with chronic PTSD demonstrated significant reduction in symptoms as compared to the control group receiving psychotherapy and pharmacological interventions (van der Kolk et al., 2014). This appears to be partly due to increased body awareness alleviating numbness and dissociation related to trauma in ways that mind-based therapies cannot address alone. Other studies indicated body awareness as an important effect of yoga for trauma survivors (Justice et al., 2018; Price et al., 2017; Rhodes, 2015). Yoga also appears to help trauma survivors regain balance of the autonomic nervous system, which may reduce allostatic load, which is the harmful effects on the body when constantly trying to regain homeostasis due to impact of stress on the nervous system (Streeter et al., 2012).

Macy, Jones, Graham, & Roach (2018) conducted a meta-review pertaining to the efficacy of yoga as a treatment for trauma and trauma-related mental health concerns, indicating that yoga appears helpful in managing symptoms of depression and anxiety and may enhance well-being for trauma survivors. The results yielded recommendations for service providers to incorporate yoga as an ancillary treatment to trauma by making referrals to yoga classes, collaborating with yoga instructors, or to

integrate yoga if they have appropriate credentials as registered yoga teachers or therapists. The authors concluded that yoga has potential benefits for trauma survivors but cannot currently be recommended as a primary treatment without more research.

Acceptance of yoga-based interventions for trauma survivors is growing, but supporting evidence is still preliminary. Research pertaining to mental health effects of yoga more often focuses on anxiety and depressive disorders than trauma and PTSD (Macy et al., 2018). Reported benefits of yoga for managing anxiety and depression may be included in this conversation, as these disorders and related symptoms are often comorbid with trauma (Cramer, Romy, Langhorst, & Doboia, 2013; Danielsson & Rosberg, 2015; Duane-Porter et al., 2016; Ross, Friedmann, Bevans, & Thomas, 2013; Telles, Singh, & Balkrishna, 2012). Yoga research related to health and well-being faces challenges due to the vastness of yoga lineages and practices and tendency to lack thorough description or justification of selected components (Sullivan, Moonaz, Weber, Taylor, & Schmalzl, 2018b). Even though the literature lacks sufficient long-term studies and large randomized control trials to make clinical recommendations for incorporation of yoga for trauma treatment, many studies report benefits of yoga for trauma survivors, suggesting an opportunity for further exploration.

Chapter 3: Methodology

Research Design

A hermeneutic phenomenological approach was used to gather meaningful qualitative data through learning about lived experiences through direct contact with the population being studied. Hermeneutic phenomenology is a philosophical approach to research that seeks to create new ways of understanding and uncovering the essences of lived human experiences and events through interpretation of relevant stories and dialogue (Crowther, Ironside, Spence, & Smythe, 2017; Kafle, 2011; Lauterbach, 2018). This research design gave space for trauma survivors to share their stories which, in turn, helped create essential themes that speak to their narratives of the phenomena being studied: how trauma has affected their occupational participation and the ways in which yoga has helped them heal. As explained by Aho (2013):

The primary aim of phenomenology is to allow an experience to reveal or show itself on its own terms without any ontological assumptions about 'what' the experience actually is. This requires 'suspending' or 'bracketing out' the theoretical assumptions and scientific frameworks that we would ordinarily depend on in order to encounter what immediately presents itself in experience as it presents itself (p. 752).

Hermeneutic phenomenology requires the researcher and participants to work together to co-construct a mutual understanding of the phenomena being studied. This is an embodied approach in which the researcher is involved in feeling, making sense, and interpreting the shared experiences in ways in which they may even finding

understanding through recognizing parts of themselves in the stories (Crowther et al., 2017). The researcher plays the role of a bridge between the stories told and interpretative meanings (Crowther et al., 2017).

Research Paradigm

Constructivism underlies phenomenology to posit that meaning is created, not discovered, through the narratives of those who have interacted with the phenomenon studied (Lauterbach, 2018). A constructivist paradigm was used to guide this research study in order to shed light to the lived experiences of trauma survivors and gain insight about the role yoga has played in their lives. This took the form of a conversation in which control was shared between the researcher and participant (Lincoln, Lynham, & Guba, 2011). This created space for the participants to become actively involved in the conversation and share what was desired. It also helped break down power dynamics in effort to prevent potential triggers that are present in discussing trauma and speaking with someone who may be viewed as an authority figure. As the researcher, I shared control with the participants by prefacing the conversation with an introduction of myself and reminding them that all questions are optional. This enabled reciprocity and empathy throughout the interviews. I used guiding questions that were open-ended for the participants to expand in the ways that they chose to. My openness towards new perspectives allowed me to listen to the narratives of the participants so we could create new meaning together. Once the data were analyzed, they were compared and contrasted in order to develop major themes and constructs to address that were agreed upon by the researcher and participants (Crowther et al., 2017).

Researcher

Hermeneutic phenomenology is an embodied research approach, meaning that as the researcher, I cannot fully separate myself from this study. I found it crucial to introduce myself to my participants in order to break down power dynamics and help them feel safe to speak openly with me about vulnerable topics. This helped facilitate conversations in which the researcher and subjects could create new meanings to the study's areas of focus together. Likewise, I would like to introduce myself here in order to situate myself as the primary investigator of this study. My name is Abigail Chirokas and I am a graduate occupational therapy student and a 200-hour certified yoga instructor. Throughout my years in this program, overlapping with some of the most challenging times of my personal life, I have turned to spirituality to find healing. Yoga has been an incredibly potent tool in my journey that has offered me solace and safety to return to my body and breath. During a period of confusion after I had just begun to develop this research project, I felt a deep calling to take time off from my schooling to expand my practice and travel to Peru where I trained to become a yoga instructor. Teaching yoga to others has been such a humbling experience to be trusted to share the wisdom of this practice with others. Though I am a lifelong student with much more to learn, my experiences as a yoga practitioner and teacher have provided me with knowledge and understanding needed to take on this research study. Throughout this study and my education, I have grown passionate about getting to the roots of physical and mental health disorders and expanding the role of occupational therapy in providing TIC. These passions have the potential to predispose the study to bias. I managed

potential bias in a similar way that I experience the philosophy of yoga: by going into the process with an open mind to allow it to become whatever it needed to become. I recorded ongoing notes and reflections throughout the interview process. Furthermore, a research team of three highly qualified members in varying areas of expertise guided the data analysis in a constant comparative approach to reduce bias.

Participant Recruitment

Upon approval by the Institutional Review Board (see Appendix A), participants were recruited through word of mouth and contacting local yoga studios, three of which were willing to send my recruitment script in their newsletters to students (see Appendix B). An incentive in the form of a \$25 Amazon gift card was offered for participation. People who were interested in participation contacted the researcher directly by email and were screened for eligibility.

Three participants were selected who confirmed that they met the following inclusion criteria: 18 years or older; have experienced a traumatic event which was defined as exposure to threatened or actual death, serious injury, or sexual violence; have had what they would consider a regular yoga practice for at least one year consisting of asana and one or more of the following components: meditation, pranayama, chanting; are open to sharing their personal experiences pertaining to their yoga practice and the significance it has held in their life and how trauma has impacted their participant in daily life activities. Participants were excluded from participation if they were under the age of 18; unable to provide informed consent; unable to meet in person or over video/audio conference; or were unable or unwilling to share their

experiences regarding the role yoga has held in their life and how trauma affects their daily life activities.

Methods/Instruments

Upon signing the Informed Consent Form (Appendix C), each participant completed two interviews with the researcher. Two participants completed the interviews via video conference; one participant opted for audio conference to enhance confidentiality. The initial interviews were semi-structured and were conducted with open-ended questions prepared ahead of time (see Appendix D). This guided the interview and ensured that major themes were addressed to accumulate comparable data whilst allowing for some flexibility and freedom for both the researcher and the participant (Stuckey, 2013). The follow-up interview provided an opportunity for the participants to share any reflections that had come up since the initial interview and allowed the researcher to clarify findings and pose follow-up questions to refine the focus.

Analysis of Data

Interviews were recorded and transcribed via Temi, an online transcription service (Temi, n.d.). The data analysis began with open coding until major categories emerged, allowing for axial coding to find supporting evidence (Creswell & Poth, 2018). A constant comparative method, which is typical of a grounded theory approach to qualitative research, was used to analyze and code data from the transcriptions directly after each interview, which was compared with the data from the other interviews on multiple levels (Boeije, 2002). Horizontalization was used to highlight significant

statements, which developed into clusters of meaning which subsequently formed the themes of the interviews (Creswell & Poth, 2018).

Quality

In order to ensure quality of the findings, the researcher reviewed each transcription for accuracy while playing the recording of the interview. To enhance validity, peer debriefing was used by sharing the transcripts with the faculty advisor and committee members, all of whom offered different perspectives (Creswell & Poth, 2018). Member checking was used to ensure trustworthiness by asking the participants to clarify areas of confusion and verify the researcher's interpretations of their experiences in the follow-up interviews (Birt, Scott, Cavers, Campbell, & Walter, 2016). Offering rich, detailed descriptions through the inclusion of long quotations from the participants in the results helps to establish transferability. Reliability was ensured by coming to intercoder agreement with thesis committee members on important themes and the language used to describe them (Creswell & Poth, 2018).

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Chapter 4: Manuscript

Abstract

A hermeneutic phenomenological approach was used to explore the effects of trauma on occupational participation and well-being and how yoga impacts healing. Three trauma survivors with yoga practices consisting of Asana (postures), Pranayama (breath control), and meditation shared their stories. Interviews yielded compelling accounts of how yoga has helped participants manage the evolving effects of trauma and open towards embodied healing. The major theme *embodiment* was arrived at with constituent themes: *opening towards possibilities, connection, the power of breath, yoga as a microcosm*. Findings suggest an opportunity for integration of yoga and occupational therapy in a holistic approach to trauma.

Introduction

The term 'trauma-informed' has become more apparent on the collective consciousness in the past decade (Becker-Blease, 2017). This corresponds with a cultural shift towards awakening to the reality of the pervasiveness of trauma in and around us, challenging the façade that trauma only happens overseas or for war veterans. As put by Bessel van der Kolk, "for many people the war begins at home... for every soldier who serves in a war zone abroad, there are ten children who are endangered in their own homes" (2014, p. 21). The expanding conversation surrounding trauma may be in part due to the increased visibility for trauma survivors in the past few years through the increased support for the #MeToo movement and the collective traumas faced and amplified with the COVID-19 pandemic and rise of the Black Lives Matter movement. It

may also be due to growing public health concern: Nearly three quarters of individuals will be exposed to trauma in their lifetimes, with disparities seen in people of color and sexual minority populations (Ballard & Kripalani, 2016; Benjet et al., 2016; Spires et al., 2017; Nadal, 2018; Office for Victims of Crime, 2014). The global prevalence of trauma paired with its potential for “lasting adverse effects on the individual’s functioning and mental, physical, social, emotional or spiritual well-being” (Substance Abuse and Mental Health Services Administration [SAMHSA], 2014, p. 7) reveals a significant public health threat (Magruder, McLaughlin, & Elmore Borbon, 2017). This threat is reinforced by research indicating that Adverse Childhood Experiences (ACEs), a range of exposures most often related to childhood abuse, neglect, and household dysfunction, are linked to disease and high-risk health behaviors in adulthood (Felitti et al., 2019; Brown, Masho, Perera, Mezuk, & Cohen, 2014).

Trauma entails being overwhelmed beyond the capacity to cope (SAMHSA, 2014; AOTA, 2018) in the face of a traumatic event, which is defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as “exposure to actual or threatened death, serious injury or sexual violence” (American Psychiatric Association, 2013, p. 271). Other circumstances that may incite trauma include, but are not limited to, exposure to violence in the home or community, life-threatening illness, grief and loss, natural disaster, involvement in war, life-threatening illnesses, microaggressions, hate crimes, and oppression due to race, sexuality, or gender (Ballard & Kripalani, 2016; Nadal, 2018; SAMHSA, 2014; Torchalla, Killoran, Fisher, & Bahen, 2018).

Systemic inequality causes power imbalances for those with marginalized identities, putting Black, Indigenous, and People of Color (BIPOC), especially women and girls of color, at higher risk of exposure to trauma such as sexual violence (Spires et al., 2017). As health care professions become more trauma-informed, Becker-Blease discussed the importance of recognizing the links between trauma and systems of oppression and giving voice to trauma survivors. She advised “without this critical engagement with the systems behind the trauma-informed movement, there is a risk of perpetuating the same victim-blaming, silencing, shaming, and retraumatizing practices ‘simply by another name’” (Becker-Blease, 2017, pp. 131-132). This is important to reassess as the conversation opens to trauma in occupational therapy and yoga spaces, which cannot be removed from the systems they are intertwined in that reinforce trauma.

According to the principles of occupational therapy, participation in meaningful and satisfying occupations, or everyday life activities, is inextricably tied to well-being (AOTA, 2020; Hammel, 2017). Occupational therapy practitioners have a role in providing trauma-informed care to address developmental and functional implications of trauma (AOTA, 2018). Edgelow, MacPherson, Arnaly, Tam-Seto, and Cramm (2019) indicated the importance of providing trauma-informed care to all clients and populations receiving occupational therapy services, regardless of diagnosis, as evidence is emerging that trauma can underlie many health conditions that are already being treated by occupational therapists. Universal inclusion of trauma-informed care may be used to enhance accessibility on a whole population level, and intensive services may be

implemented for individuals demonstrating functional concerns due to trauma (Fette, Lambdin-Pattavina, & Weaver, 2019).

Trauma has the capacity to cause long-term effects on an individual's health, quality of life, community integration, social participation, and the ability to develop and maintain meaningful relationships (Bisson, 2007; Torchalla et al., 2018). Isolation from others is a problem when social support is thought to be one of the strongest indicators of resilience following trauma (van der Kolk, 2014). Trauma survivors are susceptible to developing comorbid psychiatric conditions such as PTSD, anxiety disorders, depression, and substance abuse, as well as physical health issues such as obesity, heart disease, chronic pain, and sleep disturbances (Danielsson & Rosberg, 2015; Rhodes, 2015; Torchalla et al., 2018). Trauma can cause nervous system dysfunction (Briere & Spinazzola, 2005). This contributes to interoceptive and proprioceptive sensory processing dysregulation that leads to body awareness challenges (Payne, Levine, & Crane-Godreau, 2015; Khalsa, Feinstein, Simmons, & Paulus, 2018; Harrison, Kats, Williams, & Aziz-Zadeh, 2019; Mehling et al., 2011). Interoceptive difficulties are linked to alexithymia, a symptom of trauma that causes difficulties verbalizing internal emotional and physical sensations (Shah, Hall, Catmur, & Bird, 2016; van der Kolk, 2014). Dissociation may manifest as a coping mechanism for the emotional and physical discomfort trauma causes, leading an individual to split off from reality and consequently from their body, affecting daily functioning, quality of life, and engagement in relationships (Fette et al., 2019; Richardson, 2019; van der Kolk, 2014). This impairs the functioning of the mind-body connection.

The interplay of mental and physical health symptoms of trauma has the capacity to affect satisfaction and participation in most, if not all, everyday life roles, routines, and habits (Alers, 2014; Edgelow et al., 2019; Rhodes, 2015; van der Kolk, 2014). The very occupations one engages with can be affected when there are avoidances due to trauma-related stimuli (Torchalla et al., 2018). Occupations related to self-care, productivity, and leisure are most affected by trauma (Edgelow et al., 2019). Social interactions and capacity for close, trusting relationships and intimacy are also negatively impacted (AOTA, 2015; Briere & Spinazzola, 2005; Rhodes, 2015). Whilst certain occupations tend to be affected across the lifespan, symptoms of trauma can manifest differently across evolving life roles and contexts. For example, work is often affected in adults: PTSD is the second leading condition responsible for role disruption due to days out of work, highlighting the role of occupational therapists in helping trauma survivors return to work and optimize satisfaction in doing so (Alonso et al., 2011; Edgelow, Harrison, Miceli, & Cramm, 2020).

Occupational therapy has a role in supporting health-promoting routines, role fulfillment, coping skills, symptom management, and participation in occupations affected by trauma (Torchalla et al., 2018). Occupational therapists may address barriers to optimal occupational participation and introduce ways to cope with adverse emotional and physical symptoms that arise from trauma, going beyond management of physical symptoms to focus on developing deeper levels of resilience, wellness, and self-awareness throughout all stages of the recovery process (Fette et al., 2019; Torchalla et al., 2018). However, like other allopathic (i.e., Western) medical disciplines,

occupational therapy is not immune from the tendency towards Cartesian mind-body dualism, which views the mind and body as distinctly different (Ergas, 2014; Mehta, 2011). This mode of thinking limits the ability for healthcare providers to view individuals through a holistic lens needed to provide comprehensive TIC.

Pharmacological interventions tend to be at the forefront of trauma treatment, which can be beneficial when used as an adjunct therapy but can be problematic when medication is used alone to treat symptoms whilst neglecting the deeper physiological, psychological, and spiritual layers implicated by trauma (Bassett, Tsosie, & Nannauck, 2012; Jindani & Khalsa, 2015; van der Kolk, 2014). There may even be limitations associated with talk therapy when alexithymia is present (Edgelow et al., 2019; van der Kolk, 2014).

Integrative health practices may be considered to address the complexities of the manifestations of trauma. Complementary health approaches and integrative health (CHAIH) refers to a range of services, products, and practices that may be used alongside conventional medical approaches to health and wellness (Bradshaw, 2017; George, Avila, Speranger, Bailey, & Silvers, 2018; "What is Integrative Medicine?", 2011). Yoga is one of the most used CHAIH approaches (Clarke, Barnes, Black, Stussman, & Nahin, 2018). Yoga, which derives from the Sanskrit word *yuj* meaning "to yoke" or unite the multiple layers of one's being, is a mind-body-spirit practice that has the capacity to "engage the entire organism in the process of psychological healing" (Jindani & Khalsa, 2015, p. 399). Patanjali's Yoga Sutra describes the philosophy of yoga in reference to Ashtanga: the eight limbs of yoga which outline moral, ethical, and spiritual

guidelines for living a purposeful and meaningful life, as depicted in Figure 1 (González & Eckstrom, 2016; Satchidananda, 2012).

Acceptance of yoga-based interventions for trauma survivors is growing. Yoga as an adjunct therapy alongside talk therapy and pharmacology appears more effective than talk therapy and pharmacology alone (van der Kolk et al., 2014). Research indicates that yoga may alleviate symptoms of mental health disorders such as anxiety and depression (Cramer, Romy, Langhorst, & Doboia, 2013; Danielsson & Rosberg, 2015; Duan-Porter et al., 2016; Rhodes, Spinazzola, & van der Kolk, 2016; Ross, Friedmann, Bevans, & Thomas, 2013; Telles, Singh, & Balkrishna, 2012). Yoga may also alleviate symptoms of chronic physiological conditions such as high blood pressure, inflammation, chronic pain, nervous system dysregulation, and digestive challenges (Chugh-Gupta, Baldassarre, & Vrkljan, 2013; Cramer et al., 2013; Macy, Jones, Graham, & Roach, 2018; Büssing, Michalsen, Khalsa, Telles, & Sherman, 2012; White et al., 2010). Among the lesser discussed effects of yoga are spiritual effects which may bring about a sense of connection within ones subtle (energetic) body and with the universe (Little, 2016; Feuerstein, 2013).

Yoga integrates both top-down and bottom-up processes, creating mutual communication between the brain and body that can positively impact mental and physical health (Sullivan et al., 2018a; Taylor, Goehler, Galper, Innes, & Bourguignon, 2010). For trauma survivors who experience dissociation, yoga may offer a refreshing and unfamiliar experience of uniting the mind and body (Rhodes, 2015). Studies have indicated body awareness as an important effect of yoga for trauma survivors (Justice,

Brems, & Ehlers, 2018; Price et al., 2017; Rhodes, 2015; van der Kolk et al., 2014). Yoga also appears to help trauma survivors regain balance of the autonomic nervous system and reduce allostatic load, which is the harmful effects on the body when constantly trying to regain homeostasis due to impact of stress on the nervous system (Streeter, Gerbarg, Saper, Ciraulo, & Brown, 2012). There is evidence that yoga may support recovery for sexual assault survivors by helping them manage anxiety, regulate emotions, and regain control of the breath (Graham & Plummer, 2018; Nicotera & Connolly, 2020; Stevens & McLeod, 2019). As explained by Doehring (2019), body-centered practices such as yoga may help trauma survivors relearn how it feels to be safe in the body, which is needed to search for meaning of life. This is related to Porges's polyvagal theory, which posits that improved vagal regulation is associated with feelings of safety, calmness, emotional regulation, adaptability, and resilience (Doehring, 2019; Streeter et al., 2012; Sullivan et al., 2018). This theory can also be applied to access the effects of breathing exercises, or pranayama, for symptoms associated with trauma (Breit et al., 2018).

Yoga may cause individuals to feel safe to process emotions. According to the emotional processing theory, exposure to trauma alters neural networks connected to fear stimuli, resulting in overactivity and maladaptive responses to trauma-related associations that threaten optimal occupational participation (Rauch & Foa, 2006; Torchalla et al., 2018). Engaging with trauma-related stimuli in safe ways can help disconfirm the fear and anxiety-related responses and improve occupational participation (Torchalla et al., 2018). The polyvagal theory and emotional processing

theory may complement traditional occupational therapy theories and models. For example, the Person-Environment-Occupation (PEO) Model uses a client-centered approach to consider the complexities of the relationship between personal factors, environmental and systemic factors, and occupational factors as influenced by different stages in the lifespan (Law et al., 1996). This could be effective combined with the emotional processing theory to consider how trauma-related avoidances affect an individual in these domains as well as how these factors may enhance or limit occupational participation and well-being.

Spirituality can be a supportive coping mechanism that helps individuals heal and grow from trauma, or an area of struggle for trauma survivors that creates a heightened risk for mental health disorders (Park, Currier, Harris, & Slattery, 2017; Starnino, 2016). Posttraumatic growth refers to positive personal changes that arise in some individuals following trauma (Khursheed & Shahnawaz, 2020). There is evidence that spirituality is a strong predictor of posttraumatic growth (Bryant-Davis et al., 2012; Khursheed & Shahnawaz, 2020; Werdel, Dy-Liacco, Ciarrocchi, Wicks, & Breslford, 2014). Moreover, Khursheed and Shahnawaz (2020) make the distinction that spirituality is positively correlated with self-compassion, which appears to lead to posttraumatic growth. In this way, yoga may present a pathway to developing posttraumatic growth through practicing Ahimsa, an ethical guideline in Patanjali's eightfold path of yoga that emphasizes compassion for the self and others (Muktibodhananda, 2013).

Current research indicates benefits of yoga, occasionally discussing how yoga affects the mind-body connection but is limited in its exploration of the spiritual effects

of yoga that may make a difference in healing from trauma. Occupational therapy may have the potential to bridge the gaps between the therapeutic use of yoga and occupational therapy in trauma-informed care by gaining an understanding of how yoga may strengthen the mind-body-spirit connection to promote occupational participation and well-being for trauma survivors.

Methods

Purpose and research questions. The purpose of this study was to gain insights from the narratives of trauma survivors who have had regular yoga practices to determine their perceptions of the effects of yoga on their occupational participation and well-being. This was intended to cultivate a body of knowledge to deepen and expand conversations regarding trauma-informed care and the use of yoga as an intervention within occupational therapy practice. This study sought to answer the following research questions: What are trauma survivors' perceptions of the effects of (1) trauma on well-being and occupational participation, and (2) yoga on well-being and occupational participation?

Research design and paradigm. A hermeneutic phenomenological approach was used to gather meaningful qualitative data through direct connection with the population being studied. Hermeneutic phenomenology requires collaboration between the researcher and participants to co-construct and uncover meaning from the phenomena being studied (Crowther, Ironside, Spence, & Smythe, 2017; Kafle, 2013; Lauterbach, 2018). Constructivism underlies phenomenology to posit that meaning is created, not discovered, through the narratives of those who have interacted with the

phenomenon studied (Lauterbach, 2018). A constructivist paradigm was used to guide this research study to shed light to the lived experiences of trauma survivors and gain insight about the role yoga has played in their journeys. This took the form of conversations in which control was shared between the researcher and participants (Lincoln, Lynham, & Guba, 2011).

Participants and recruitment. Upon approval by the Institutional Review Board, eligible participants were recruited through word of mouth and contacting local yoga studios willing to send a recruitment script to students. Three participants were selected who confirmed that they met the following inclusion criteria: 18 years or older; have experienced a traumatic event which was defined as “exposure to threatened or actual death, serious injury, or sexual violence” (American Psychiatric Association, 2013); have had what they would consider a regular yoga practice for at least one year consisting of asana and one or more of the following components: meditation, pranayama, chanting; are open to sharing their personal experiences pertaining to their yoga practice how trauma has impacted their participant in daily life activities.

Data collection and measures. Upon signing the informed consent form, two participants completed the interviews via video conference; one participant opted for audio conference to further protect privacy. The initial interviews were semi-structured and were conducted with open-ended questions regarding details of their yoga practices, the effects of trauma on well-being and occupational participation, and how yoga affects well-being and occupational participation. This guided the interview and ensured that major themes were addressed to accumulate comparable data whilst

allowing for some flexibility and freedom for both the researcher and the participant (Stuckey, 2013). The follow-up interview provided an opportunity for the participants to share any reflections that had come up since the initial interview and allowed the researcher to clarify interpretations and pose follow-up questions.

Analysis of data. The interviews were recorded and transcribed via Temi, an online transcription service (Temi, n.d.). The data analysis began with open coding until major categories emerged, allowing for axial coding to find supporting evidence (Creswell & Poth, 2018). A constant comparative method, which is typical of a grounded theory approach to qualitative research, was used to analyze and code data from the transcriptions directly after each interview, which was compared with the data from the other interviews on multiple levels (Boeije, 2002). Horizontalization was used to highlight significant statements, which developed into clusters of meaning which subsequently formed themes (Creswell & Poth, 2018). Pseudonyms were used to protect confidentiality, with an option provided for participants to choose their own pseudonym.

Quality. To ensure quality of the findings, the researcher reviewed each transcription for accuracy while playing the recording of the interview and made corrections where errors were identified. Peer debriefing was used by sharing the transcripts with the faculty advisor and committee members, all of whom offered different perspectives (Creswell & Poth, 2018). Member checking was used to improve trustworthiness by asking the participants to clarify areas of confusion and verify the researcher's interpretations of their experiences in the follow-up interviews (Birt, Scott,

Cavers, Campbell, & Walter, 2016). Offering rich, detailed descriptions through the inclusion of long quotations from the participants in the results helped to establish transferability. Reliability was ensured by coming to intercoder agreement with a multidisciplinary research team on important themes and the language used to describe them (Creswell & Poth, 2018).

Results

Three individuals participated in in-depth interviews sharing their stories and insights regarding their journeys with yoga and trauma (see Table 1 for Participant Information). The findings revealed multilayered implications of trauma on occupational participation and the dynamic interplay of the effects of yoga.

Multilayered implications of trauma. Participants provided compelling accounts of how trauma has permeated nearly every aspect of their lives, drawing attention to the complex interplay of physical, emotional, psychological, and sensory effects of trauma. Janine noted that in her experience, trauma recovery varies throughout life:

I have a lot of respect for the innate wisdom of the psyche and the body to time the steps of healing in this process... I didn't realize that it's really a lifelong process. It's not like you are finished with it at some point. It's like the layers of an onion and I think it's helpful to know that so you don't have the expectation that it's like a light switch. Read this book and go to this support group and you'll be done. No, I don't think it works that way.

Among the effects of trauma described by the participants included numerous physical effects. Lazarus described feelings of unsafety that manifested as physical symptoms following his trauma:

I didn't feel safe in my body. My heart rate was spiking for no reason; I was sweating profusely; my pupils were dilated... It's linked to my trauma.

Beyond feeling disconnected from his body, Lazarus reported challenges with “taking on others’ bodies”:

I started taking on others' bodies and being very worried about others' bodies and checking to make sure that they're breathing, checking to see if they have a pulse... It took a long time before I really could just let other people's bodies be... I just always worry that something like [my trauma] will happen again and I'll have to respond but I'll have the wrong reaction and I'm worried about it intruding into my professional life.

Janine also described physical manifestations of her trauma, highlighting that these symptoms of trauma were not recognized and understood by an allopathic doctor.

I arrived at the doorsteps of [university] without a complete toolkit for living an adult life because of the trauma I had endured. So that made for a pretty challenging and rocky entry into graduate school. And I was experiencing some difficult physical symptoms... I have a sensitive digestive system and that got a lot worse, headaches, anxiety that was pretty high.

Janine continued to detail psychological effects related to her trauma:

I was really cut off from my emotions growing up and... I mean it's like walking around the world blind because you don't have your compass working. And I had a moral compass, but I didn't have a sense of my own feelings and needs. Also, I was cut off from my own physical experience.

Additionally, Janine described some of the sensory effects of trauma she had experienced:

I think that one of the effects of trauma is my nervous system can get overloaded and then I get very clumsy and I drop things. Like I hit my arm or I hit my head against the wall, the doorway. My perception of where my body is in space gets off. Again, yoga can help me calm that nervous system so that I'm able to literally function in the world, you know, be able to walk around without bumping into things and be able to get up in the morning and open a jar in the kitchen, things like that. When my nervous system is all tangled up, those things become difficult.

She felt disconnected due to her trauma:

I was kind of walking through the world numb. And that's a classic right? That's a classic for trauma survivors.

She also described the prevalence of accidents among trauma survivors from her own experiences and those of friends who have histories of trauma:

I know that being accident prone is common among trauma survivors. I know two people in my own social circle who have had multiple serious accidents

involving many broken bones and lots of recovery time and it's associated with a history of abuse.

Furthermore, she described the capacity for unresolved trauma to manifest as disease and chronic illness:

I know a number of people who've died from cancer young who went with unresolved trauma... There's no question in my mind that unresolved trauma can kill you... because the body holds the trauma. And if it builds up and it's not released, then the disease can take over and kill ya.

Functional implications. Participants detailed how trauma has affected their participation in life activities. When asked about how his experience of trauma affects his daily occupations, Lazarus responded:

Oh my god. In so many ways... From the time that I wake up to the time I go to bed, it's there and it's a shadow. It's something that will always be there, and I mean from basic everyday functioning, like waking up on time... Last week, I was sleeping until really, really late and it was because of the medications that I'm currently taking... And from the moment that I wake up though, I think about it and even when I'm not awake, when I'm asleep, I think about it, I dream about it... I wash my hands in the morning, wash my face, feeling everything that can be a part of my trauma I guess...And even times of the day might set it off.

He noted that virtually all parts of his life have been affected:

I am trying to think about a part of my life that it's not in and I'm having trouble even calling any to mind. It's there with my yoga practice, it's there with my

relationships, it's there with my academics, it's there with my free time activities... It's thinking about death in life all the time too. And I think that's what separates me from the pack per se... and it frames a lot of my interactions just as more intense... It's there even when I eat or if I don't eat like I can't be removed from it and it cannot be removed from me.

Willow described how occupations such as work, sleep, and social engagement are affected:

I often have taken refuge in my work, well to avoid and to support my healing from particular traumas. Sleep is always affected... In those periods where trauma is really active, I may, you know, have several times where I wake up. I tend to keep myself more removed from social settings. Not reclusive, not isolated, but just quiet helps. So I stay less engaged socially in those periods of time.

When Janine was asked about the effects of her experience of trauma on her occupations, she clarified that she had advanced to a point in her healing journey where she was able to reflect in ways she would not have necessarily been able to in the past:

I'm really far along on my journey, you know, I wouldn't be able to narrate to you how it affected me early on because I was just hanging on. In a lot of ways, I think of it as climbing out of a very, very deep hole and I could only know how deep the hole is by climbing that far out of it.

She went on to share her insights about her difficulties forming relationships and trusting authority figures, which impacted her social and professional life:

I could not be alone in a clinical setting like a doctor's office with a man. I couldn't. It was not possible. So I had to plan carefully. It's a lot of extra work when you have to kind of craft your life that way. And trauma had very profound negative effect on my efforts to form a stable and loving bond with another adult. I had a lot of breakups. It also left me having a hard time trusting people in authority... So it threw a wrench in my efforts to build a professional life because of that difficulty with trusting and trusting my own judgment around people. And it made it hard also to make friends. One way I learned to protect myself was kind of wearing a mask a lot of the time, portraying an image of someone I thought was acceptable. And when I was living that way, I wasn't living authentically, so I wasn't drawing to me people whom I could feel close to. So I felt very isolated. So it affected my social life very much.

Janine stated that her experience of trauma drove her to claim her voice as an activist for marginalized people, though she still needed to learn to advocate for herself:

It also drew me to work that I think is very important and valuable, which is, it made me an activist. It made me very empathetic toward whole groups of people in society who suffer injustice. And I did a lot of activism... I see that it's a positive consequence early on figuring out how to use my voice, but... it's taking a long time to speak up on my own behalf.

She also expressed the extreme time demands of living with trauma:

It's basically like having a least a second, if not a third job. It's just an enormous amount of time spent having to study social interactions and try to understand

why I was feeling what I was feeling and then how to handle it better the next time. Because I was really kind of a mystery to myself in so many ways for a really long time. You know, why would I feel so terrified in a certain situation? Why did I kind of sabotage the situation? So I just had to, you know, go to school over and over and over again on what's a feeling, what's going on inside of me that that came up... How do I need to bring kindness and compassion to this and what can I look at differently now that I'm an adult and I have resources that I didn't have when I was younger? So I spent so much time and energy managing relationships to try to keep stability in my personal and my professional lives.

Effects of yoga. Table 2 categorizes the effects of the three participants' yoga practices in order to draw attention to the emotional, psychological, physical, social, and spiritual effects that they described. However, much like the effects of trauma, the effects of yoga are not fully separable. The analysis of the results led to the formation of the essential theme of *embodiment*. Five constituent themes work together to arrive at this major theme: *choices, opening towards possibilities, the power of breath, connection, and yoga as a microcosm*. The following themes aim to draw attention to how all these effects occurring together have the capacity to facilitate a more integrated, embodied state in which healing from trauma may deepen.

Embodiment. Embodiment arose as a central theme to describe the capacity for yoga to facilitate a state of wholeness and integrated senses in which trauma survivors feel safe within their bodies. Yoga was even described by Janine as a “barometer” that brings awareness to how the mind and body are doing:

I allow my body to guide the practice. I do the basic six motions of the spine and after that I'm just listening in for what would feel like opening, what would feel nourishing, what would feel invigorating on any particular day. Yoga is just so effective at giving me your read on how I'm doing... It's like a barometer.

She went on to describe how yoga has helped her feel safe inside of her body:

[Yoga] is a place where people who have found being in the body a pretty unsafe place can start learning how to trust themselves, trust the experience of being in that body... You don't know that you don't feel safe until you actually someday have a little taste of it. And then you start realizing what you've been missing... It's remarkable to have moments of not feeling like prey, not feeling like you have to hide out in the world.

Janine reported walking through this world feeling more awake and alive as a result from practicing yoga:

And it's really quite remarkable... how just one layer at a time, the colors get brighter, senses more appealing, more vibrant, the feeling of the wind on my skin... I'm more sensitive to it. I'm more awake in the world, awake to the experience of really being alive... It's amazing what yoga can do for people.

When asked about the term “embodiment” to describe this experience, she described the feelings she associates with being in an embodied state:

Waking up in the morning and becoming conscious of this relaxed, warm sensation flowing around the body for one, that's one moment for me of embodiment... being aware of having a positive experience being inside this body

and the contrast of that is an experience of most of awareness and consciousness concentrated above the shoulders, not having very much conscious awareness of living in the rest of the body. And, you know, there are really good reasons for being cut off. Really good reasons why safety is found in the mind. Yet the quality of daily, moment to moment experience is vastly different being embodied.

Lazarus described how yoga helped him feel safe in his body:

I didn't feel like I was actually in my body unless I was doing yoga... Yoga first showed me that I have a body to be into, to get into... Now, being in my body has changed because it's an ongoing process of trying to find home in a place that is foreign now and I couldn't stay home.

He explained how being in his body meant when he initially began practicing yoga:

What does being in my body mean to me, I think was different when I first started yoga because it was relaxing the muscles that I knew that I had, that I was exercising, that I was training and it was reducing the tension between muscles and... I felt like my bones were just being moved into alignment and I was picturing everything from the anatomical view and that was really helpful and what my definition of what being in my body meant then. But after [my trauma] it took on an entirely different meaning because I lost my body that day and I'm still fighting for it back because I don't feel 100% comfortable in my body, but I don't expect to because it's something that will probably stay with me for the rest of my life.

He explained how it feels now to be in his body:

Being in my body now for me means showing my body love and not putting it through shit. Like not just working it and working it and working it and not taking care of it at all. Sabotaging myself basically is the opposite of what being in my body means to me. When I take care of my body when I'm actually in my body, it's almost like a tingling sensation that starts from my hands and the hands for me are one of the hardest parts about being in my body or like one of the hardest regions of my body to be in because I don't always feel like they're in my control.

He also expressed a similar viewpoint to Janine in describing the importance of feeling safe to be in his body:

For me it's, it's about feeling safe. It's about like knowing that there's not an emergency that is around the corner that I'm going to have to jump to.

Lazarus described how he falls away from his practice from time to time, but what has helped him return to it is the memory of “being on the mountain,” which is referring to the standing asana *Tadasana*, or Mountain Pose, in which he has enjoyed beginning his practice:

I've fallen away from the practice in the past and what has brought me back has been the memory that my body has of being on the mountain. I can recall certain instances... feeling really refreshed and like a new person with a totally different worldview, like sensing the world differently after I came off the mat and in the periods that I don't do yoga, I'm numbing myself.

Willow also spoke to the experience of embodiment in relation to yoga:

I think embodied learning feels different. Looks different, actually. For example, children are learning always through their body for source of contact to the world and it's language that comes later... So it's all about not being in the cognitive lens only regardless of how brilliant someone is or what a great learner they may be intellectually, mentally, if you will. There's still other ways that they have to incorporate and integrate the learning. So embodiment isn't a static place that you achieve. Like now I'll go here and then I'll practice embodiment. It's a journey and process and not unlike again, how we start out. We start out in a very embodied way. All our nervous system in its development knows is body.

In this state, Willow has felt empowered to take up residence within their body and being.

It's a sense of aligning up, of something aligning within us, so in that moment we're in an Asana, you know, not every time, but sometimes... there's a sense that body, mind, spirit, it aligns up. What does that even mean? I don't know, except that you are no longer only the practitioner in that egoic way. Now I'm not in, I'm not doing a posture. I become the posture. I take up residence in my Warrior II and I find that I'm bigger and I go beyond myself as I stretch. Also deeper... deeper within. There's a sense of maybe wholeness of internal alignment. And by that I mean again, body, mind, spirit—essence, if you will—not being separable... I feel grounded when I feel anytime in an embodied state.

Choices. Participants identified empowerment found in exercising choice in aspects of their lives. Lazarus described the significance of making choices in well-being:

I think that well-being is having that ability to accept your past as given and to live in the present as given with what you have, with where you are, with who you're with, with what you've brought to it and what your past has given you and accepting then that you have control of the future and it's up to you and your actions and your choices. Well-being is about choices. It's like having a set of choices that you can choose from.

Janine described the empowerment that making personal choices and taking ownership over her practice has brought her while taking yoga classes:

I completely take permission to kind of go off road and do my own thing. And sometimes even a totally different posture... It's not to prove anything to anyone else. It's not to look like somebody else or to please the teacher. And it took a long time to let go of that please the teacher thing... Trauma survivors really need to feel they are in the driver's seat, but they often feel vulnerable in relationships with an authority figure like a teacher.

Opening towards possibilities. The participants began their yoga practices for the initial emotional or physical benefits but other possibilities emerged with time. The participants noticed that their practices deepened in meaning with time as the safety within their body continued to be reinforced and allowed them to access new possibilities and modes of thinking. Participants described opening to possibilities of presence, self-reflection, deep insight, and spiritual exploration. Willow expressed that presence experienced during yoga can translate to a possibility for presence during life off the mat:

I'm much more present. I'm much more -- a possibility that I'm more present is more there. That I can like wake up to that, Oh, this is another human being right there in front of me... It helps me give others time and space.

Yoga may be seen as a tool for opening towards self-reflection off the mat as well, as

Willow stated:

My yoga practice also nurtures curiosity, self-reflection in the moment on the mat in the Asana and thereafter.

Janine's indicated her preferred order of practice included yoga (asana) practice,

followed by seated meditation:

Yoga very quickly reconnects me to my inner life, to my emotions and helps me understand why I may be having some physical symptoms that I'm having. So to me, it's incredibly effective preventive health care. It just [is] really, really effective. And then the meditation helps me gain deep insight. So yoga is like the gateway in and then meditation... it's almost like a form of psychotherapy...Yoga opens me up and then meditation is like listening to that bell ring.

This idea of opening expands to relationships for Janine:

For me, yoga has a lot to do with being fully human, meaning that I'm in touch with my own emotions. I'm aware of what's going on inside of myself emotionally and physically and spiritually and mentally and intellectually. And... with those kind of channels open, I'm also better able to perceive what's going on with the people around me.

Lazarus described how yoga, especially having started at a young age, has helped him to feel more openminded towards religion and spirituality:

Had I not done yoga in the first place, I don't think that I would have been so open to trying all of these new things and going to the most religious place on this planet and immersing myself in different religions. And I think that it was a good thing to have the exposure so young because inevitably when you perform yoga, you also are somehow relating to the religion that it comes from... I think that the fact that I started young, I had more of an accepting view towards different religions and that helped me a lot in my healing... I feel less scared to confront the unknown now than I did before.

Lazarus noted that, though yoga has been helpful for his healing, it is not a cure-all to trauma, but can help generate openness for more self-reflection and healing.

For some things even like so big as trauma, I think that additional interventions are necessary, and it shouldn't be looked at as a panacea. So I think that it has its strengths almost to a certain limit and depending on what happens in your life or what you're trying to work through, yoga might have the answers at least to open the door for further work.

The power of breath. Pranayama is one of the eight limbs of Ashtanga yoga (see Figure 1), which all three of the participants described as meaningful to their yoga practices. Willow said that “*breath is kind of spirit in a way... soul is spirit, is essence, is breath.*” Using these terms interchangeably indicates the underlying theme of

connection between the body, mind, and spirit through breath. Here, Willow described how engaging with pranayama has helped regulate her nervous system:

It helps me to balance the nervous system's sympathetic and parasympathetic components. In the parasympathetic, we're reflective, meditative, contemplative, things slow down, right? And in the sympathetic we're in that fear or flight mode and reactive... So both of those parts of me are essentially to survival and essential for my mat. An inhalation is sympathetic nervous system. Exhalation is parasympathetic governed. So when I exhale, I'm already practicing that balance, preparing for the next in breath. And so pranayama really helps to train my nervous system towards surrender.

Lazarus also described how he has practiced breath awareness and control, including Ujayi breathing, which is a warming, energizing breath pattern that can be incorporated throughout yoga postures:

What yoga has offered me each time is my breath back. It's about the breath and even in emergency situations, it's about the breath.

He described the physical sensations he has experienced when deep breathing:

I like Ujayi breathing and I like deep breathing... When I'm really breathing right, I know it because I can literally feel my hands become warmer and there's just more life in all of the parts of my body. Whereas if I'm not breathing right, if I'm not breathing deeply, everything is out of sync and my feet might be cold and my hands are overheating and my head is hot and it's like things are just at different temperatures. Having that breath, power, that life to breathe into certain parts

of the body, that's what I also do for practices, like focusing on my anatomy and sending breath to that spot or to those areas.

Connection. The participants all described connection in varying forms: connection to others, to self, and to spirituality. This theme is used broadly to describe the impacts of yoga on counteracting the disruption of connection that occurs with trauma, as explained by Janine:

The way that trauma wreaks havoc is it breaks the connection. It keeps people isolated and also for me, disconnected from myself. It's such a theft of your birthright.

Janine described how she coped with disconnection in the past:

Addiction, co-dependence and food addiction were ways that I coped with being so cut off from people and from myself... I've worked really hard to break through those habits but I can be vulnerable to slipping back. What yoga does is when I'm kind of in a time in my life when I'm super busy and maybe a little cut off from myself, yoga very quickly reconnects me to my inner life.

If trauma is what breaks the connection, yoga may be a tool to foster new connection:

For me, [yoga] has restored my connection to my own inner life, which was broken when I went through various kinds of trauma. And it's restored my capacity to connect in safe ways with other people.

One way that this can be seen is with the support felt from connection to community through yoga, as described by Janine in regard to her experience taking a weekly yoga class:

One of the things that I really have liked about classes was that they can feel like...I don't know if you're familiar with the term Sangha, but that sense of supportive community. I really enjoyed having that experience with other people in a very healthy way.

Janine discussed how spirituality, for her, is rooted in connection:

In my life, they're very, very intertwined and I can engage [yoga] practices for the specific purpose of calming down when I'm agitated and I can also engage those practices as one of the ways that I feel connected to the ultimate power that's greater than any one of us.... Spirituality for me is, it's about transcending what divides us and seeing what connects us.

Lazarus described the feelings of connection with himself that can seem possible when practicing yoga:

It's about targeting things and eliminating them or accepting them and loving them. On the mat, I see it as possible that I am in union with myself... It really does feel good to be in sync with your mind and your body. I hate when those two things are moving at different paces.

Yoga as a microcosm. Many of the identified effects of yoga appear to extend beyond the mat to overall ways of being in the world. The term *microcosm* is used as a metaphor for changes applied to the greater life scheme (macrocosm). This idea was exemplified in Willow's description of awareness found in a yoga asana that she realized can be present in other parts of her life:

Sometimes in Adho Mukha Svanasana [downward facing dog], when I'm in that pose and I lengthen my trunk upwards and I see how much more space and presence and spaciousness that I have in my trunk, I think wow, this capacity to change and to lengthen is so present in other parts of my life... I might have an experience in practice where I'm in a Pavrita, I'm in a rotation, and as I'm twisting again, same kind of thing. I'll pause, come into relationship to my length and then go back and deepen that twist and think, Oh, I can just keep moving in gentle and focused ways. And I keep learning as I move.

These realizations are thus not limited to the physical expressions of the practice, but the capacities that Willow describes are available to call upon in other aspects of life. A similar idea was encompassed in Willow's idea of lifting the gaze in Tadasana:

We want to be able to be inward and then also to be external outward. And we want that to be seamless so we can be responsive and participate in our world. So when people lift their eyes, even softly... towards an imaginary horizon, that changes what I see in my world... It changes my capacity to experience that I am part of the world.

Lifting the gaze allows one to be open to their surroundings and present in the world and see themselves as part of the world. Doing so in a yoga class can become metaphorical for doing so in day-to-day life. Lazarus expressed how finding presence in yoga helps him tune into himself and desires for his life:

I do the flows and I just am present in the moment and I feel more in tune with what I want to be doing and who I want to be long term.

He elaborated:

Yoga I guess helps me to slow down. It just kind of helps me to reevaluate the situation of my life at the moment and see it for more what it's worth, like to have a more objective and, not disconnected, but more connected view of things and to see things as being actually meaningful and as transferable and as things that you are able to [do].... The word yoga is for me, it includes meditation and it includes the physical movements of the practice. And I can see both of those things positively affecting life because it can be a tool... It's harder to muster the energy for, I must admit like when you're feeling really depressed, I'm still trying to figure that one out. Like how when I'm really low, when I can barely even get out of bed. Like how can I then get onto my mat? I think that it is about a routine.

Willows described lessons from yoga, such as Ahimsa (see Figure 1) that translate to life off the mat:

[Yoga offers] a balance of the external life outside of the mat. Practice of Ahimsa, do no harm to oneself is what I teach in my practice. So you have to just decide for yourself what's the level of just comfort, challenge, pain, and adjust and adapt for your own practice constantly. And then do no harm to others in word, in deed, in action and so much more. But I think this practice of self, of responsibility and of doing no harm and of living one's truth on the mat and then that all translates to life. That's, you know, beyond practice.

The participants provided their own definitions of well-being as *balance* or *harmony* between the many layers of life. Willow included balance in a definition of yoga:

Yoga is for me, not unlike the second Sutra, the distillation and cessation of the fluctuations of the mind. So it's the practice of the mind that happens to be in our contemporary culture, more translated through expression through the body, physical strength, flexibility, alignment. So I think of yoga just as it translates as a means to balance my life on and off the mat. The physical expression in Hatha yoga really keeps me focused and it helps to, again to calm the distractions of mind. At least when I'm in my practice, sometimes it can carry over.

Through yoga, balance is achieved on and off the mat for Willow. Furthermore, this idea corresponds with Willow's definition of well-being:

[Well-being is] a balance of body, mind, and essence – spirit – an inner sense of balance... Capacity to be in service or be a part of the external environment and not be in a state of distraction. A sense of vitality, a sense of presence through my work and life and day, [the] capacity to sleep well, to let it go at the end of the day. Maybe balance or well-being for me is a balance between will... and surrender. The capacity to both be engaged, fully active, and then to let go that I cannot change and just be, reside in that stillness...I think well-being is internal balance.

Janine offered a similar definition of well-being:

Well-being means thriving with all the dimensions of life and balance. So, emotional, physical, intellectual, spiritual, social community.

Lazarus's definition of well-being also encompassed multiple layers:

Well-being is physical, mental, spiritual, emotional, sexual, personal synchrony, harmony. It's about being in line with yourself and being in line with other people. Well-being is social, so much of it too... Well-being is a state of synchrony, a state of peaceful synchrony. It's being at peace with yourself and taking care of yourself and knowing that even if you don't feel good for whatever reason, like you're taking the actions and the necessary steps so that you will get better... like what can I do for myself now that will make me feel better tomorrow or that will make me feel better two months from now or that will make me feel better in six months from now? And I think that well-being is having that ability to accept your past as given and to live in the present as given.

Janine described how yoga and massage have benefited her emotional well-being and occupational participation:

Yoga and massage are ways that make my body feel safe enough to release some old traumatic memories too... A few days ago... I got a massage; I got my hair cut and I went to social dancing... Those were all really lovely, well-boundaried, safe forms of touch all in one day and the next day a memory emerged, and it took... about a day and a half after that to handle the emotional wave... Even though it's challenging to live through that kind of process over and over again, for me, there's always a payoff because there's just this incremental increase in my freedom to feel good inside my body and inside my heart... I was having some chest pains for maybe two weeks before this release. And I wonder if maybe this memory was sort

of rising to the surface and needing to come out, but it wasn't really safe enough to let it out until after that day of all this wonderful safe touch.

Additional quotations from participants are organized by theme in Table 3.

Discussion

Qualitative research can be used to support “embodied relational understanding” for healthcare practitioners to engage with phenomena in a deeper, more open way (Todres, 2008, p. 1566). As embodiment was the essential theme for the participants, it was also an essential theme for how the research was conducted and how it is hoped to be received. Todres (2008) stated that “‘sense-making’ requires a knowing with the body, as it is the lived body that connects language to the world of experience” (p. 1571). In hermeneutic phenomenology, the researcher assumes the role of the bridge between stories and found meanings: Interpreting the shared experiences may even cause them to find deeper understanding through recognizing parts of themselves in the stories (Crowther et al., 2017). The primary researcher of this study is a graduate occupational therapy student and certified 200-hour yoga teacher. To analyze the results from this study and generate a discussion, she has needed to feel the effects of yoga in her own body in relation to the insights provided by the participants in order to evaluate and synthesize them in a way that connects the topics of this study – yoga, trauma, and occupational therapy – in a lived sense.

The participants indicated *multilayered implications of trauma*, answering the first research question in outlining perceived physical, emotional, psychological, and sensory effects of trauma. These manifestations of trauma cannot be fully separated,

but rather operate concurrently and cause *functional implications* across virtually all occupations, including self-care and social interactions. Similarly, the effects of the participants' yoga practices overlap, as detailed in Table 2: Effects of Yoga.

Embodiment arose as the essential theme of this study to describe the capacity for yoga to facilitate a state of wholeness and integrated senses in which trauma survivors feel safe within their bodies. Embodiment is a visceral experience that invites understanding not through language and cognition, but through sensation. This state has allowed the participants to feel grounded, safe, connected, and alive within their bodies and senses in ways that have been threatened due to trauma. In this state, the participants are empowered to take up residence within their bodies and beings. Yoga invites practitioners to embody the energy of the asana they are in which contains its own myth and symbolism even if subconscious to the practitioner (Kaivalya & van der Kooij, 2010). Embodiment feels like *becoming* a posture, as opposed to performing a movement, and in turn going beyond oneself into a state of wholeness and effortless alignment. This idea corresponds with Janine's experience of feeling more "awake to the experience of really being alive" as a result from practicing yoga. Lazarus described that in periods in which he is not practicing yoga, he is numbing himself. In this sense, embodiment is the contrast of dissociation, which causes an individual to split from their current reality and limits their ability to be aware of their selves and surroundings (Richardson, 2019; Van der Kolk, 2014). Embodiment is not a constant state and the journey is ongoing and fluctuating. Factors were identified that help contribute to an embodied state for trauma survivors.

An embodied state is vulnerable for trauma survivors who have difficulties finding safety in the body. In order to feel safe to enter an embodied state, it is necessary that *choices* are provided for trauma survivors in yoga spaces. Choice becomes stripped away from an individual in the face of trauma, leading to feelings of powerlessness that may pervade long after the initial trauma occurs. It is a guideline in trauma-informed yoga to always offer choices though this is not always explicitly stated by yoga instructors (Nolan, 2016; Justice et al., 2018). Many trauma survivors need safety, empowerment, and encouragement to feel that they are capable of making their own choices (Quiros & Berger, 2015). Janine described how she learned with time to give herself permission to take ownership over her yoga practice and make choices and modifications when taking classes that feel better for her body and mind. This may not be immediately available to yoga students who are just beginning their practice and may be especially challenging for trauma survivors who struggle with asserting their needs or letting go of pleasing figures of authority.

Once there is sufficient safety established within the body, an individual may find space to *open towards possibilities*. Yoga creates a vessel for possibilities to emerge. Participants described opening to possibilities of presence, self-reflection, gaining deep insight from meditation, and spiritual exploration.

Meaningful components of participants' practices included asana, meditation, and pranayama. The possibilities they were opened to with pranayama practice revealed *the power of breath*. Participants described how focusing on breath helps regulate or "tonify" their nervous systems. Yoga has provided a space for them to safely

return to the breath, which has helped them experience wellness-promoting effects that translate to everyday moments. Lazarus described the physical sensations he feels in his body when he is connected to his breath, showing effects of breath on body awareness.

The theme *connection* was chosen to describe the impacts of yoga on counteracting the disruption of connection that occurs with trauma. Janine described how trauma “breaks the connection” between mind and body, which caused her to develop unhealthy coping mechanisms. Yoga, however, has allowed her to reconnect with her inner life and connect safely with others. Participants highlighted the sense of community that has resulted from taking yoga classes. This sense of connection, whether with the self, others, or higher power, was related to some of the participants’ sense of spirituality.

Many of the identified effects of yoga appear to extend beyond the mat to overall ways of being in the world. In this way, *yoga as a microcosm* offers a metaphor for changes applied to the greater life scheme (macrocosm). The participants provided their own definitions of well-being as *balance* or harmony between the many layers of life (physical, emotional, spiritual, social, etc.). Willow described how the physical expressions in asana practice encourage balance on and off the mat. Balance on the mat can be seen in balancing poses (e.g., the commonly known *Vrksasana* or Tree Pose) as well as finding balance within all the fluctuating components of the practice. This may carry over to life off the mat, encouraging balance between all areas of life. Yoga appears to have functional effects off the mat when there is transferability of realizations and skills to other aspects of life. Finding presence during a yoga practice

can help an individual tune in to the present moment in everyday life. Yoga may also help an individual tune in with their body and emotions and how the two inform each other, which is something that may have to be relearned by trauma survivors who have become disconnected from their physical and emotional needs. Looking at yoga as a microcosm describes ways in which yoga can be an embodied practice in everyday life and offers a rich response to the study's second research question investigating the perceived effects of yoga on well-being and occupational participation.

Implications for occupational therapy. Trauma negatively affects participation in occupations including but not limited to self-care, sleep, work, and social interactions and may underlie physical and mental health conditions and symptoms that occupational therapists already treat (Edgelow et al., 2019). Using a trauma-informed approach creates a universally designed space for all clients (Fette et al., 2019).

Most trauma research exists in social work, counseling, and clinical psychology. Adding depth to the knowledge base of occupational therapy with this population necessitates learning from these fields to incorporate applicable theories and treatment approaches into practice. Participants confirmed the effectiveness of yoga, including pranayama, to increase feelings of safety in the body and emotional awareness in their experiences. Theories such as Porges's polyvagal theory and the emotional processing theory may complement traditional occupational therapy theories and models, such as the PEO Model, to deepen providers' understanding of client factors, adapt environments and occupations, and help clients feel safe to work through fears and triggers that prevent optimal occupational participation. The participants' views of

balance as brought about by yoga corresponds with the importance of occupational balance: Well-being is associated with satisfaction in the choice and time allotment given to occupations (Backman, 2004; Wagman, Håkansson, & Björklund, 2012).

Yoga can be viewed as a preparatory activity for engagement in occupations, or as a meaningful occupation in and of itself. Yoga can also be viewed as a spiritual practice, which is identified as an instrumental activity of daily life in the Occupational Therapy Practice Framework; occupational therapists have a role in introducing and encouraging spiritual health-promoting routines (AOTA, 2020). However, there is hesitation amongst occupational therapists to incorporate spirituality into a client-centered approach to therapy (Misiorek & Janus, 2018; Morris, 2013; Mthembu, Roman, & Wegner, 2016). There are several factors contributing to this tendency, one of which may simply be that spirituality is difficult to define as it is subjective and evolving. Seaward and Lissard have noted some commonalities amongst human spirituality: “(1) An insightful relationship with oneself and others; (2) a strong personal value system; (3); fulfillment of a meaningful purpose to one’s life; (4) curiosity towards the mysteries of life” (2020, p. 103). Spirituality has the capacity to permeate all occupations when performed in a meaningful, intentional way (Hemphill, 2020). This impacts *what* occupations an individual participates in, *how* the individual participates in those occupations, and the meaning they bring about (AOTA, 2020; Hemphill, 2020).

Additionally, as occupational therapy moves towards a more public health informed “upstreamist” approach, which emphasizes social and environmental determinants of health over medical care (Machanda, 2013), yoga may be used as a

form of preventive health care for trauma survivors. The feelings of safety and community that arise from yoga may help practitioners feel safe within social interactions and relationships, and this sense of community has potent effects on well-being (Machanda, 2013). Addressing trauma in a holistic approach involving yoga may promote satisfaction in occupations and perhaps could prevent trauma-related mental and physical health symptoms from developing or worsening.

Asana is the third limb of yoga (Figure 1) and is comprised of the physical postures that help bring the body into balance; Asana is the mainstream association with yoga in the West (Kaivalya & van der Kooij, 2010). Occupational therapists' perspectives on yoga tend to fixate more heavily on physical asana and neglect the remaining limbs of yoga that make it an embodied philosophical and spiritual practice. This can limit attention to all the other components of yoga that may be helpful for trauma survivors and makes the practice inaccessible for many who are not represented in the stereotypical, Western depiction of yoga (Moonaz, 2016; Thomas, Warren-Findlow, & Webb, 2019). Seeing that embodiment was the essential theme from this research, this may suggest that occupational therapy clients will benefit with a deeper understanding of yoga when as a therapy for trauma. A multidisciplinary team of healthcare professionals may be most effective at treating trauma (Edgelow et al., 2019) which raises questions as to what a service delivery team that includes yoga may look like. It is within the scope of occupational therapy to provide yoga, yet there are not clear guidelines for training requirements for practitioners (Bradshaw, 2017). This suggests an opportunity for occupational therapists who are not adequately trained in

yoga to refer clients or to collaborate with certified yoga teachers and therapists who specialize in trauma-informed yoga.

Barriers. The findings from this study suggest that a yoga practice can be a therapeutic agent in trauma recovery that can promote well-being and satisfaction in occupations. However, there are individual and systemic barriers of access for trauma survivors to find healing in this way. Depression is commonly comorbid with trauma (Torchalla et al., 2018; Rhodes, 2015) and may cause challenges in finding the motivation and energy to practice yoga. As Lazarus mentioned, working it into a routine is important, and occupational therapists have a role in helping clients establish meaningful and health-promoting routines (AOTA, 2020). Additionally, the findings demonstrate how yoga can help practitioners become aware of their bodies and emotions. This can be triggering for trauma survivors who are not ready to handle the emotions that arise and energy that may be released. Trauma survivors may also feel triggered within a group class setting in which the yoga instructor may be perceived as an authority figure among other factors.

Despite the positive effects of yoga, participants clarified that yoga is not a panacea. It is important to be mindful that yoga alone will not likely cure trauma; the healing journey requires commitment to do self-reflection and work in other ways. Multidisciplinary approaches are recommended, but this can be time consuming, as reinforced by Janine who compared trauma recovery to having “a second, if not third job.” All three participants reported value in attending classes to support their practices, but the cost and time commitment required of yoga studio classes may result in yoga

being inaccessible to many (Page, 2016). The inequality of access to opportunities that help trauma survivors actualize their healing potential indicates a possible barrier to occupational justice (Wilcock & Townsend, 2009).

Many of the healing effects of yoga reported by the participants corresponded with the essential theme of embodiment. There are many reasons, however, that a yoga practice may not be embodied. Western media portrayals of yoga foster a hyper focus on asana, reducing yoga to a primarily physical practice, when this is only one aspect of an entire lived practice intended for spiritual liberation (Page, 2016). This may prevent a practitioner from actualizing the potential of yoga as an embodied practice. There may also be personal blocks. For example, a trauma survivor may not be ready to embark on a mindful, spiritual practice that has the potential to bring emotions to the surface because they can be incredibly visceral and overwhelming, especially if approached too quickly.

This study was marked by several limitations. The DSM-5's definition of trauma as "exposure to actual or threatened death, serious injury or sexual violence" was used as inclusion criteria for this study (*American Psychiatric Association, 2013, p. 271*), but limited inclusion for participants who have experienced trauma in other ways. Participants were not asked to disclose the specific type of trauma(s) they had endured. In addition, their perceptions may have been affected by memory. Future resource could improve upon the present study by focusing on specific types of traumatic experienced by participants or establishing criteria for style of their yoga practice.

The results from this study encourage occupational therapy practitioners to reflect on trauma on a deeper level as it affects occupational participation and well-being. It also challenges practitioners who include yoga in their interventions to be critical of their understanding of yoga practice because it may be affected by mainstream representation and media. It urges practitioners to consider yoga as an occupation that engages the mind-body-spirit that may be effective in targeting the many layers of an individual that become altered due to trauma.

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Table 1: Participant Information

<i>Pseudonym</i>	<i>Age (Range)</i>	<i>Occupation</i>	<i>When Yoga Practice Began</i>	<i>Components of Yoga Practice</i>
Janine	50-60	Works in Human Resources at a nonprofit organization; Mindfulness-Based Stress Reduction teacher	Began taking classes in graduate school 33 years ago	Asana, Pranayama, meditation*, chanting typically once a week when taking a class
Willow	67	Self-employed in the somatic arts	Took first class 50 years ago; began studying with Iyengar tradition in late 20s and became a certified instructor in mid-50s	Asana, Pranayama, meditation
Lazarus	20	College student	Took first classes about 7 years ago as introduced by his swimming coach	Asana, meditation, Pranayama

Table 2: Effects of Yoga

This table contains direct quotations from participants to categorize effects of yoga.

		Participant Perspectives		
		Janine	Willow	Lazarus
Effects of Yoga Practice	Emotional	<p><i>I go a lot of the time to classes or to my own mat in order to tonify my nervous system and be able to handle the stresses of modern life. Beyond that, the most important thing is the way that it keeps me in touch with my own inner life, my emotions, and how my emotions are affecting my physical state.</i></p> <p><i>The structure of the practice led to this really wonderful, deep, steady feeling of euphoria. That lasted for about a day and a half after the class. And it was a weekly class. So that sense of inner peace was something that was new to me and it was wonderful.</i></p> <p><i>Yoga helps [an] emotion rise to the surface so I can pay some attention to it. Yoga is such a useful way of loosening up those emotions that are lodged somewhere in my body.</i></p>	<p><i>[After yoga practice] there's a sense of where my feet are on the ground. Sometimes when I leave, I practice walking like I'm aware of physical sensation and... [I feel] calmer, always calmer if I'm in a busy hall or if I have to drive, I feel like, again, I'm sort of back into that place of clarity, focus and calmness. I'm calmed. You can't be in these postures and be there with anxiety, frustration, agitation and worry. You can't do the posture. You could maybe look like you're doing it but the effects are not as available.</i></p>	<p><i>I did not want to miss yoga because it made me feel really good and it put me into a peaceful state of mind.</i></p> <p><i>I have barely even been able to find a routine with other things let alone getting onto the mat every single day. Yeah. It's been challenging, but it is something that I have gone to because it does bring me a peace, like a peace that I don't really find anywhere else that I can do on my own and know that it's in my control.</i></p>

	<p>Psychological</p>	<p><i>Meditation helps me gain deep insight. So yoga is like the gateway in and then meditation is... almost like a form of psychotherapy.</i></p> <p><i>I've made a ton of progress in healing from being cut off from my inner life as a young person [but] I'm vulnerable to kind of losing touch with myself...My built-in daily yoga and meditation practice really help me stay connected to my own inner life, which is just critical...I feel very blessed to have found this as a way of reconnecting with myself way, way beyond the Western idea of [yoga as] an athletic event or pure stress management, you know. That's just a tiny part of what this can do.</i></p>	<p><i>Movement, as it's healing the body also would [heal] the mind and the psychological component would be... we become stronger. We have more inner sense of presence. We can carry more.</i></p> <p><i>When we're practicing Tadasana [mountain pose], when we're practicing lengthened spines and trunks, we're in the world in a different way. Our vision's not brought down. Our focus is not forward. It's up and out... I'm in a less closed-in heart center, depressed state. So it lifts, it has the potential to lift our spirits.</i></p>	<p><i>I don't think that talk therapy alone would be as beneficial as yoga and talk therapy depending on the kind of trauma... maybe it can help you [if] you've dissociated from your body and you've totally disconnected from the real world and you're living in the past and the videotape and cassette keeps playing and replaying over and over of that day tuning into something that's different. Changing the channel for other work and other things might be really helpful.</i></p>
	<p>Physical</p>	<p><i>[Yoga] definitely calmed my nervous system, helped me, you know, sleep better, calmed my digestive system...when I would meditate at the end of the classes, when I would do Savasana, the</i></p>	<p><i>[Yoga] is the practice of the mind that happens to be in our contemporary culture more translated through expression through the body, physical strength, flexibility, alignment.</i></p>	<p><i>When I first started yoga... it was relaxing the muscles that I knew that I had... it was reducing the tension between muscles... I felt like my bones were just being moved into alignment.</i></p>

		<p><i>headache would ease up. So I immediately found it... to be physically helpful.</i></p> <p><i>So yoga is like a tonic for the nervous system, and I think that that might be beneficial. Like if I were an OT, if I were a trauma informed OT and I got the history on this client and saw, Oh, this is an interesting pattern of acts, that would be a flag to me. Hmm. This is interesting. I wonder if there's a trauma history there and if yoga could be helpful for preventing a recurrence of, you know, another accident.</i></p>	<p><i>So I think of yoga just as it translates as a means to balance my life on and off the mat. The physical expression in Hatha yoga really keeps me focused and it helps to, again to calm the distractions of mind.</i></p> <p><i>Inflammation is more present when I'm not moving in that way.</i></p>	<p><i>I noticed the immediate benefits of yoga from swimming and my times improved. I was feeling more well rested, I wasn't aching so much and I was taking better care of myself and I credit all of that to the yoga practice because in there we did different kinds of practices, but most of them were actually more relaxation-based and I needed that and I didn't know that I needed that until I actually started doing it.</i></p>
Social				

	<p><i>One of the things that I really have liked about classes was that they can feel like...I don't know if you're familiar with the term Sangha, but that sense of supportive community. I really enjoyed having that experience with other people in a very healthy way.</i></p> <p><i>I think yoga has the capacity. I mean it, for me, it has restored my connection to my own inner life, which was broken when I went through various kinds of trauma. And it's restored my capacity to connect in safe ways with other people.</i></p>	<p><i>I'm much more present... a possibility that I'm more present is more there. That I can like wake up to that, Oh, this is another human being right there in front of me... It helps me give others time and space.</i></p> <p><i>I think I give people more space to find their own path... I'm also very aware in challenging or in differences of opinion, relationship, moments that I don't have the right answer. There's a lot of ways to be in that moment with others.</i></p> <p><i>I consider my teaching a practice in and of itself... I think you can't teach and not develop compassion.</i></p>	<p><i>Where I'm studying, there is yoga every Wednesday, so we have like a community kind of build up and it's not that many people, maybe six or seven every week, but it's small enough that we can still get work done and feel like we're together as a group and that's good to have a group that you can go to but that only meets once a week.</i></p>
<p>Spiritual</p>	<p><i>I have a regular set of morning practices that includes yoga, meditation, prayer and some reading of spiritual literature and some writing.</i></p> <p><i>Yoga and the sitting meditation... those two pieces are very intertwined for me...and I can engage</i></p>	<p><i>We are taught in the Iyengar world and we teach that we're moving from the outer sheath, the skin itself, to the inner being, to the innermost being [which is] soul, spirit... Like deeper soul level and for those people not interested in soul as a word, then the</i></p>	<p><i>Had I not done yoga in the first place, I don't think that I would have been so open to trying all of these new things and going to the most religious place on this planet and immersing myself in different religions. And I think that it was a good thing to have the exposure so young</i></p>

	<p><i>those practices for the specific purpose of calming down when I'm agitated and I can also engage those practices as one of the ways that I feel connected to the ultimate power that's greater than any one of us... that's sort of my term for spirit.... I always feel energy flowing through my body in yoga practice. Then I feel really connected to these sources of energy much, much greater than my own individual self. And that energy flow is something that connects us all, you know, all living beings, all forms of life... So yoga attunes me to that life force. To that life energy.</i></p> <p><i>That's really the root of my spiritual practice. So being aware of the divine spark in myself and then being able to connect with that divine spark in people. And it's a wonderful thing to do that in a yoga class where there's a sense of community</i></p>	<p><i>idea of essence.</i></p> <p><i>We cannot measure spirituality. But if there's a sense of inner peace, of well-being, or calmness, of doing no harm to oneself... it's a spiritual practice, I believe it is.</i></p>	<p><i>because inevitably when you perform yoga, you also are somehow relating to the religion that it comes from. And I think that it's important to recognize... I think that the fact that I started young, I had like more of an accepting view towards different religions and that helped me a lot in my healing. And I mean it's something that I can't say definitively one way or the other like, Oh, I'm X or I'm Y like religion. But I do think that it helped, it is helping in the process. Like I feel less scared to confront the unknown now than I did before.</i></p>
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Table 3: Additional Quotations from Participants

This table contains additional quotations from participants that support the major themes regarding the reported effects of yoga for readers interested in further exploration of their insights.

<p>Functional Implications of Trauma</p>
<p><i>[For me,] there wasn't as much time as maybe untraumatized people have, if they exist, but anyway, less traumatized people, I had less time to just relax and enjoy life, you know, this kind of intense, not as much fun, carefree kind of idea. I spent a lot of time managing anxiety just to be able to function. Lots and lots and lots of time. That time has shrunk now... Another way that that trauma manifested for me was it created challenges with just creating a functional living environment. So it's not terrible and it was never terrible and there have been cycles and seasons of being more or less attentive to cleanliness and order, but just having what I would call a functional home life where things are in their places and it's relatively clean and just having a place like that... That's been a real effort, not something that came naturally. I had to put a lot of work into that. – Janine</i></p> <p><i>[Trauma] also has made me feel alone from a lot of other people. It has made me feel like nobody can relate to me or that I can't relate to anybody and it makes me feel like I'm different in some way but people don't know that I'm different until they actually start talking to me. And then a lot of assumptions come up and I have to be very careful where I walk, who I talk to about it because if I talk to the wrong people then it's like sharing information that is sensitive and that was supposed to be kept secret. So it's in every part of my life. – Lazarus</i></p>
<p>Embodiment</p>
<p><i>In addition to saving our lives, what's such a blessing in my own personal experiences [is yoga] can enrich the quality of my life so much. Like I said, just to walk around and know I'm in this, in this body, taking in the data from my senses, enjoying the colors of the flowers, and even today, three different shades of gray on the Lake and in the fog and in the air, it was beautiful... There's such beauty to take in when my nervous system isn't having to just bear the burden of that trauma, when it's freed up to be paying attention to those details... If it's all bogged down with old junk, then it can't pick up on these lovely sensations of the moment. – Janine</i></p> <p><i>In addition to saving our lives, what's such a blessing in my own personal experiences [is yoga] can enrich the quality of my life so much. Like I said, just to walk around and know I'm in this, in this body, taking in the data from my senses, enjoying the colors of the flowers, and</i></p>

even today, three different shades of gray on the Lake and in the fog and in the air, it was beautiful... There's such beauty to take in when my nervous system isn't having to just bear the burden of that trauma, when it's freed up to be paying attention to those details... If it's all bogged down with old junk, then it can't pick up on these lovely sensations of the moment.
– Janine

That sensory motor feedback loop I think goes throughout our body and back to brain and back to emotional intelligence within the brain. So I think moving and trauma healing for trauma is part of a neural motor experience. The brain gets stimulated when we move... We don't perhaps ever lose, we don't completely ever get rid of the traumatic memory, but it [can be] integrated in such a way that it's not in charge or in control. So movement keeps the brain working as a whole miraculous organ that it is so that we have multi dimensions to our experience. It's not only about the trauma, we have other things available and other parts of our stuff available that, in the midst of the trauma, we don't have. I'm all trauma brain.
– Willow

Both in the practice in the Iyengar tradition and in my practice and the discipline of authentic movement, embodied awareness, and embodied consciousness even, has a lens that takes us out of the cognitive lens of consciousness, and more into the physicality of how we learn cellularly and in different modalities among the multiple intelligences of our bodies.
– Willow

Opening Towards Possibilities

Some yoga classes are more like gym classes and there's a feeling of competitiveness and check each others, you know, form, but those aren't the classes that I stay with. I go to the ones where I feel we're a supportive community for each other and that we're really tuning inside, tuning inward when we're doing our practices to listen in and listen for the messages, whether that's about, gosh, I am really tired and I need to take it easy tonight, I need to be gentle, or maybe an emotion washes over. It's a powerful emotion of sadness and I'm not sure where it comes from. And the yoga helps that emotion rise to the surface so I can pay some attention to it. Yoga is such a useful way of loosening up those emotions that are lodged somewhere in my body – Janine

Death is not something that really scares me so much anymore. I don't know if that's the self-reflection due to the trauma or self-reflection due to the yoga or my investigation into the spirituality or the combination of these things. I think there has been a transformation that has occurred. – Lazarus

There's no question in my mind that healing practices that help people get in touch with what's gone on in their past and then help release it... that can save our lives. – Janine

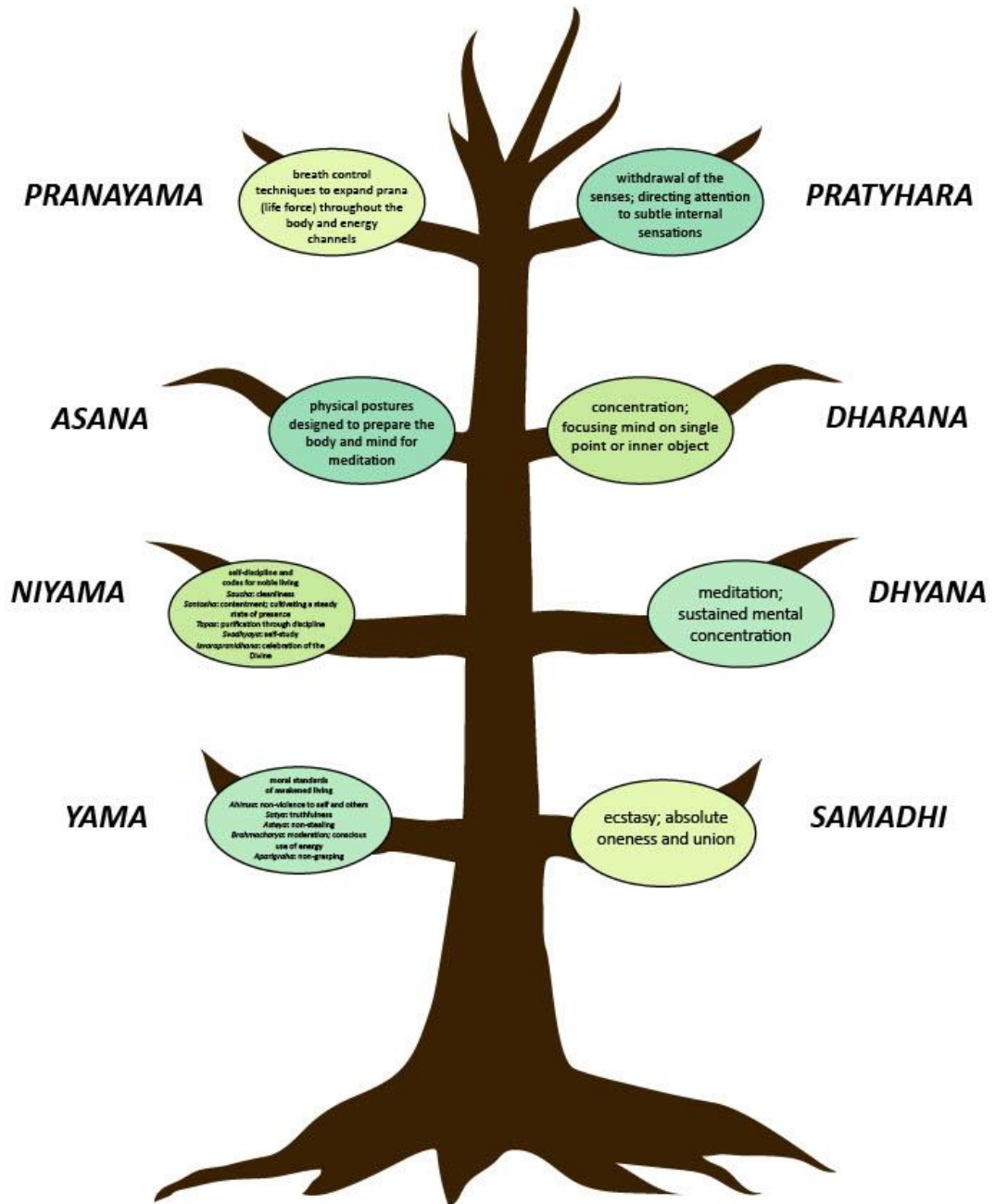
Yoga as a Microcosm

Now when I do a tree, when I take that posture, I've studied that posture with maybe 10 teachers and their guidance comes back to me and there are micro adjustments that I can make and I can sink into it in a way that's much more developed than when I first learned it. There's an element of mastery and I love that I can continue to keep learning and striving with that. I go a lot of the time to classes or to my own mat in order to tonify my nervous system and be able to handle the stresses of modern life. Beyond that, the most important thing is the way that it keeps me in touch with my own inner life, my emotions, and how my emotions are affecting my physical state. – Janine

Figure 1: The Eight Limbs of Yoga

Illustration was created by Nicole Marino in collaboration with Abigail Chirokas and included with permission. Sources used for information are located at the bottom of the figure.

**Ashtanga: The Eight Limbs of Classical Yoga
According to Patanjali's Yoga Sutras**



(González & Eckstrom, 2016; Satchidananda, 2012)

Appendix A: IRB Approval Letter*Ithaca College IRB**Approval Notification*

To: Abigail Chirokas
From: Warren Calderone
Subject: Protocol #49
Date: 11/20/2019



Re: [IRBID] - Yoga as a Therapy to Deepen Healing for People with Histories of Trauma

Thank you for responding to the stipulations made by the Institutional Review Board for Human Subjects Research (IRB). You are authorized to begin your project. This approval is issued under the Ithaca College's OHRP Federal-wide Assurance #00004870 and will remain in effect for a period of one year from the date of authorization.

Please add the IRB approval number IRB [IRBID] to ALL recruitment and consent materials.

The approval of your study is valid through 10/06/2020, by which time you must submit an annual report either closing the protocol or requesting permission to continue the protocol for another year. Please submit your report by **09/08/2020** so that the IRB has time to review and approve your report if you wish to continue it for another year. The project can be extended up to three years.

Please note that if there are any adverse events resulting from this research, they must be submitted through Axiom.

Sincerely,



Warren Calderone
Director of Corporate, Foundation Relations, and Sponsored Research
Institutional Review Board for Human Subjects Research

953 Danby Road, Ithaca, NY 14850, (607) 274-1206
www.ithaca.edu/sponsored-research

ithaca.edu

Appendix B: Email Recruitment Script

My name is Abigail Chirokas and I am a graduate occupational therapy student at Ithaca College and a certified 200-hour yoga instructor. I am currently working towards the completion of my master's thesis through conducting a research study pertaining to how a yoga practice may impact well-being for people with histories of trauma.

I am looking for participants who have experienced psychological trauma and have had a yoga practice that they would describe as meaningful for at least one year consisting of asanas (physical postures) and one or more of the following components: meditation, pranayama (breath control), chanting. For the purpose of this study, trauma will be defined in accordance to the DSM-5 as "exposure to actual or threatened death, serious injury or sexual violence." I have attached an information sheet further detailing the definition of trauma from the Substance Abuse and Mental Health Services Administration that can be found by following this link:
https://calswec.berkeley.edu/sites/default/files/4-3_behind_the_term_trauma.pdf

Participation in this study will require openness to speak about your experiences in two interview sessions. You will not be asked about the specifics of your trauma, but this study will require discussion about how the trauma has affected your participation in daily life activities as well as details about your yoga practice and the significance it has held in your life.

The first interview is anticipated to take about 60 minutes and the follow-up interview is anticipated to take about 30 minutes, although this timeframe is flexible depending on the extent to which you wish to share. Interviews will take place in a private, reserved room at the Tompkins County Public Library. An option will also be provided to complete the interviews over Zoom video call.

This study will provide a safe space for you to talk about your experiences with an empathetic listener and potentially inform occupational therapy practice about the usefulness of yoga as a therapy in trauma care. Support services will be offered if further discussion is desired. A \$25 Amazon gift card will be provided upon completion of the interviews. If you wish to participate or have any questions, please contact:

Abigail Chirokas, researcher
achirokas@ithaca.edu

Carole Dennis, faculty advisor
cdennis@ithaca.edu

Appendix C: Informed Consent Form [IRBID:49]

Title of the Study: Yoga as a Therapy to Deepen Healing for People with Histories of Trauma

Principal Investigator: Abigail Chirokas, Occupational Therapy Student, Ithaca College
Faculty Advisor: Carole Dennis SC.D. OT/L, FOATA

Invitation to Participate in a Research Study

You are invited to participate in a research study. In order to participate, you must have had a yoga practice that you would describe as meaningful for at least one year, including yoga asanas (physical postures) and one or more of the following components: meditation, pranayama (breath control), chanting. You must have also experienced a traumatic event in the form of “exposure to actual or threatened death, serious injury, or sexual violence” (DSM-5, 2013, p. 271). You will not be asked about the specifics of this trauma, but this study will require discussion about how the trauma has affected your participation in daily life activities as well as details about your yoga practice and the significance it has held in your life. This conversation will occur in a safe environment with the researcher. The age requirement is 18 and older. Taking part in this research study is voluntary. You are not required to participate in this study. You may stop or withdraw your participation from this study at any time.

Important Information about this Research Study

This study is being conducted to gain understanding about the role yoga plays within the lives of people with histories of trauma. Themes will be extracted to identify what the potential benefits are of a practice and how it impacts engagement in meaningful life activities. If you choose to participate, you will be asked to meet with the researcher to talk about your experiences and share your stories, preferably in-person at an agreed upon location for an interview. If this is not available, Zoom video call will be offered. The first interview will take about 60 minutes followed up with a second interview at a later date that will take about 30 minutes, thus making the total time commitment for participation about 90 minutes. This timeframe is flexible depending on the extent to which you wish to share your insights. Please note that you only need to share to the degree to which you feel comfortable and may withdraw from the conversation or study at any point. I also have resources to offer if further discussion is desired following the interview.

Please read through this entire form and ask any questions before deciding whether you would like to participate in this research study.

1. Purpose of the Study

This study is being conducted to explore how daily life activities are impacted by the experience of trauma and how a yoga practice may have an influence on well-being.

This will help provide evidence for the use of yoga within occupational therapy practice to deepen healing for clients with histories of trauma.

2. Benefits of the Study

There are no direct benefits of this study to the participant. This study will provide the opportunity for you to share your own lived experiences in a safe space with an empathetic listening which may help both you and the researcher gain understanding of how yoga may impact well-being for people who have experienced trauma. This information will be used to help bridge gaps within occupational therapy literature in the treatment of individuals who have experienced trauma that interferes with meaningful life activities. This may help guide future research studies and ultimately occupational therapy practitioners when considering the inclusion of yoga-based interventions in trauma care.

3. What You Will Be Asked to Do

You will be asked to participate in interviews on two occasions. The initial interview is anticipated to take about 60 minutes. The follow-up interview will be shorter, taking about 30 minutes. This is intended to provide time for further reflections and you may be asked to verify the researcher's understanding of your responses. Please note that the timeframes are flexible dependent on the degree to which you wish to share your stories.

4. Withdrawal from the Study

You are free to decline from answering any interview questions that make you uncomfortable and may withdraw from this study at any time. An incentive in the form of a \$25 gift card will be provided upon completion of the first interview. If you withdraw from this study after the first interview, the gift card can still be obtained. If you choose to withdraw from this study, your data will not be used.

5. Risks

This study poses minimal risk, but please be aware that it will require you to explain how your experience of trauma has affected your daily life activities. Sharing these experiences has the potential for the conversation to become emotionally triggering to the participant as it may stir up painful memories. Please note that you only need to share to the degree to which you feel comfortable. I have included resources to offer if further discussion is desired following the interview, which are listed below.

The Tompkins County Advocacy Center

(607) 277-5000

Offers free services and confidential counseling services for people who have experienced any form of domestic or sexual violence.

Ithaca Free Clinic

(607) 330-1253

Provides free medical and holistic care, as well as counseling services, for people without insurance.

6. How the Data will be Maintained in Confidence OR Anonymity of Research

Your confidentiality will be maintained in this study. No identifying information will be included in any written reports or presentations and pseudonyms will be used. Interviews will be audio recorded and transcribed. Once the data is transcribed, the original recording will be deleted in order to remove your voice from the data. The data associated with this study will be stored on a password-protected computer that is only accessible by the researchers. The data will be maintained for 3 years and destroyed at the end of that time.

7. Compensation for Injury

If you suffer an injury that requires any treatment or hospitalization as a direct result of this study, the cost for such care will be charged to you. If you have insurance, you may bill your insurance company. You will be responsible to pay all costs not covered by your insurance. Ithaca College will not pay for any care, lost wages, or provide other financial compensation.

8. If You Would Like More Information about the Study

If you would like more information about this study, please contact Abigail Chirokas (primary investigator), Carole Dennis (faculty advisor), or the Ithaca College IRB.

Abigail Chirokas
achirokas@ithaca.edu

Carole Dennis
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Ithaca College IRB
Peggy Ryan Williams Center
953 Danby Road
Ithaca, NY 14850
irb@ithaca.edu
(607) 274-3113

I have read the above and I understand its contents. I agree to participate in the study. I acknowledge that I am 18 years of age or older.

Print or Type Name

Signature

Date

I agree that I fit the criteria of having experienced trauma and have a regular yoga practice as defined above.

Signature

Date

I give my permission to be audiotaped.

Signature

Date

Appendix D: Guiding Questions for Interviews

1. What led you to begin practicing yoga?
2. For how long have you had a yoga practice?
3. Can you describe your practice to me?
 - a. What is the regularity and format of your yoga practice? For example, do you self-practice, watch videos, go to a studio, etc.?
 - b. Is there a particular style or combination of styles of yoga that you practice (e.g. Vinyasa, Ashtanga, Hatha, Kundalini, Yin, Restorative, etc.)?
 - c. What components are present in your yoga practice besides the physical postures (e.g. meditation, pranayama, chanting, etc.)? Of these, which do you find the most valuable?
4. What feelings arise for you before you step onto your mat? How do you feel as you practice yoga? How do you feel following your yoga practice?
5. How would you define well-being?
6. Do you feel yoga affects your well-being? If so, how?
7. What kind of lessons do you find yourself taking from your yoga practice beyond your mat into your everyday life?
8. How do you believe your experience of trauma affects your participation within daily life activities? What activities are affected? For example, do they affect your self-care activities, work, social interactions, sleep, hobbies or leisure?
9. How does your yoga practice affect your participation in daily life activities that are meaningful to you?
10. What are your thoughts about whether you think yoga could be a viable tool to support people in healing from trauma?

Appendix E: Author Guidelines for Occupational Therapy in Mental Health

The following guidelines for submission to Occupational Therapy in Mental Health were retrieved from <https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=womh20&#oa>

About the Journal

Occupational Therapy in Mental Health is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's [Aims & Scope](#) for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

Occupational Therapy in Mental Health accepts the following types of article: original articles.

Peer Review and Ethics

Taylor & Francis is committed to peer-review integrity and upholding the highest standards of review. Once your paper has been assessed for suitability by the editor, it will then be double-blind peer reviewed by independent, anonymous expert referees. Find out more about what to expect during peer review and read our guidance on publishing ethics.

Preparing Your Paper

Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

Word Limits

Please include a word count for your paper.

A typical paper for this journal should be no more than 40 pages, inclusive of:

Checklist: What to Include

1. **Author details.** All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript. Where available, please also include ORCIDs and social media handles (Facebook, Twitter or LinkedIn). One author will need to be identified as the corresponding author, with their email address normally displayed in the article PDF (depending on the journal) and the online article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted. Read more on authorship.
2. Should contain an unstructured abstract of 100 words.
3. You can opt to include a **video abstract** with your article. Find out how these can help your work reach a wider audience, and what to think about when filming.
4. Do not include **keywords**. Read making your article more discoverable, including information on choosing a title and search engine optimization.
5. **Funding details.** Please supply all details required by your funding and grant-awarding bodies as follows:
For single agency grants
 This work was supported by the [Funding Agency] under Grant [number xxxx].
For multiple agency grants
 This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].
6. **Disclosure statement.** This is to acknowledge any financial interest or benefit that has arisen from the direct applications of your research. Further guidance on what is a conflict of interest and how to disclose it.
7. **Biographical note.** Please supply a short biographical note for each author. This could be adapted from your departmental website or academic networking profile and should be relatively brief (e.g., no more than 200 words).
8. **Data availability statement.** If there is a data set associated with the paper, please provide information about where the data supporting the results or analyses presented in the paper can be found. Where applicable, this should include the hyperlink, DOI or other persistent identifier associated with the data set(s). Templates are also available to support authors.
9. **Data deposition.** If you choose to share or make the data underlying the study open, please deposit your data in a recognized data repository prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.
10. **Supplemental online material.** Supplemental material can be a video, dataset, fileset, sound file or anything which supports (and is pertinent to) your paper. We publish supplemental material online via Figshare. Find out more about supplemental material and how to submit it with your article.
11. **Figures.** Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for color, at the correct size). Figures should be supplied in one of our preferred file formats: EPS, PDF, PS, JPEG, TIFF, or Microsoft Word (DOC or DOCX) files are acceptable for figures that have been drawn in Word. For information relating to other file types, please consult our Submission of electronic artwork document.
12. **Tables.** Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text. Please supply editable files.
13. **Equations.** If you are submitting your manuscript as a Word document, please ensure that equations are editable. More information about mathematical symbols and equations.
14. **Units.** Please use SI units (non-italicized).