Journal of
Yoga and Physiotherapy
ISSN: 2476-1303

Juniper Publishers
key to the Researchers

Mini Review
Volume 9 Issue 2 - December 2021
DOI: 10.19080/JYP.2021.09.555759

J Yoga & Physio

Mindfulness Focussed Yoga: The Role of Interoceptive Awareness in Mindfulness and Yoga Interventions for Trauma and Pain

Alice Shires*

Graduate School of Health, University of Technology Sydney, Australia

Submission: November 17, 2021; **Published:** December 09, 2021

***Corresponding author:** Alice Shires, Graduate School of Health, University of Technology Sydney, Australia

Abstract

Contemplative traditions such as Mindfulness and Yoga have both been explored in relation to the treatment of trauma. Both promote the increased awareness of the body and mind via meditative practices that include body scanning and yoga asana. It is hypothesised that although both may be effective in increasing interoceptive awareness and the ability to observe sensations in the body, Mindfulness focussed yoga programs may assist to unlearn patterns of reactions that fuel distress associated with trauma, pain and associated mental health problems. There has been considerable development in evidence-based therapies in the treatment of trauma such as cognitive behavioural therapy, eye movement desensitisation, reprocessing and prolonged exposure. Prolonged exposure therapy has been developed as a treatment in the reduction of PTSD symptoms and has been found to be more efficacious in the reduction of PTSD symptoms than usual treatment and waitlist control [1]. However, some of these psychological treatments have been found to have high dropout rates and some worsening of symptoms and residual symptoms after treatment. As a result of these limitations there is growth in alternative treatment approaches that are more feasible including yoga as an adjunct treatment for trauma populations. So far, these studies seem to yield promising results [2,3].

Keywords: Mindfulness; Yoga; Pain; Interoceptive; Psychological treatments; Trauma; Mental health

Introduction

Interception in yoga interventions

Macy et al. [4] carried out a review of trauma and related mental health problems and reported evidence of yoga as an intervention for the effects of trauma as well as other mental health symptoms associated with trauma. However, finding the body of research lacked the rigour required to build a level of potential certainty, suggests, that the results only allow for a recommendation of Yoga as an ancillary or adjunct treatment at this stage [5]. Mixed results have been reported for example when Van de kolk et al. [6] provided trauma sensitive yoga to 64 women experiencing chronic PTSD. When they compared this to a supportive women's health education condition, they found yoga to be significantly greater in reducing PTSD symptoms compared to those in the control group. Meta analyses carried out by Cramer et al. [7] however reported overall low quality and evidence on high dropout rates in studies involving yoga and PTSD. Despite the increased research there seems to be little unanimous agreement as to the mechanisms that may be impacted by yoga interventions. Qualitative studies, i.e., Rhodes & West et al. [8,9] suggested that participants experienced increased ownership control and connection to their bodies including emotions and thoughts. A key theme identified was a greater interoceptive awareness as well as emotional regulation ability. Interception has been proposed as one of the crucial factors in yoga particularly in the treatment of trauma via yoga [6,10]. Interoceptive awareness refers to the ability to perceive sensations within the body, i.e., internal physiological sensations such as heartbeat, hunger and sensations that relate to emotions [11,12]. It is suggested that trauma can affect interoceptive ability detrimentally which may then be ameliorated by yoga. This is supported by studies including neuroimaging, post trauma, which demonstrate a decreased activation in prefrontal areas of the brain related to interoceptive awareness [13]. These neuroimaging studies seem to align with the experiences of those who have trauma histories. Most trauma involves physical harm or violation to the body and subsequent distress which creates fear and other strong bodily sensations. Over time it seems there is a disruption to interoceptive awareness which may be linked to the

feeling or experience of disconnection between mind and body that is described by many survivors of trauma Mehling et al. [14] investigated changes in interoceptive awareness amongst military personnel using integrative exercise including yoga postures. Findings revealed that after 12 weeks there was increased interoceptive awareness, self-regulation and body listening in this group as opposed to controls. These increases in interoceptive awareness may be behind the reductions in PTSD symptoms and might illuminate the mechanisms at play. Neurkirch et al. [15] also found that interoceptive awareness capacities including attention regulation, self-regulation and body listening also increased in a case series exploring the impact of an eight-week trauma sensitive yoga intervention on interoceptive awareness. The increases in interoceptive awareness found were supported by qualitative data that suggested that participants felt more aware of thoughts, feelings, and body sensations. This is consistent with previous studies [8,9] and again suggests that interoceptive awareness may be an important mechanism required for improvements in PTSD symptoms. Also, this provides further support for somatic regulation and interoceptive awareness models in the treatment of PTSD [6]. Given that studies also find that anxiety, depression, and stress decrease for participants because of yoga it may be that interoceptive awareness is a moderating factor.

Interoception in Mindfulness Interventions

If we look to the research on mindfulness, we find that interoceptive awareness is also a significant factor into theories relating to the causal effects of meditation. Evidence is building across different disciplines with regards to impairment in interoceptive ability and mental health conditions suggesting that interoceptive ability is a trans diagnostic process and is impaired in emotional disorders [16,17] and conversely associated with good mental health and increased empathy and emotional regulation, [18,19]. As a result, there has been an increased interest in interventions that focus on interoceptive ability. Mindfulness approaches and mindfulness-based intervention (MBI's) include focus on interoceptive awareness and acceptance [19,20]. In particular, Theravada teaching in the Burmese Vipassana tradition, involves training in directing attention via body scanning systematically throughout the body. This develops an interoceptive awareness whilst inhibiting the habit of learned responses associated with pleasant and unpleasant sensations and experiences. Mindfulness meditation can therefore be understood as an exposure to internally- generated stimuli such as thoughts and body sensation. In Mindfulness integrated CBT (MICBT) [20] practice there is a deliberate effort to prevent the conditioned response to unpleasant and pleasant experiences by developing an attitude of acceptance and detachment. The term Equanimity has been applied to research to capture the benefits of mindfulness interventions. Equanimity is associated with emotional regulation and has been explored within Mindfulness research. For example, Desbordes et al. [21] define Equanimity as 'an even-minded mental state or dispositional tendency toward all experiences or objects and Equanimity is defined by Cayoun as 'an ability to become unperturbed by experiences within the framework of the mind and body' [20]. Additionally analgesic effects of mindfulness have been demonstrated in chronic pain patients [22-24]. Since mindfulness of pain requires being fully present and aware of pain sensations, which is conceptualized as exposure, accepting the experience, and inhibiting the learned response to pain is further conceptualized as the application of response prevention and equanimity. The same mindfulness practice principles that have been explored in pain studies may also apply to other aversive experiences, such as trauma. Additionally, what we are seeing in yoga may be something like the training and application of Equanimity in Mindfulness practice via the exposure to internal experiences without reaction [25]. Interestingly Carmody & Baer [26] found that yoga was significantly associated with aspects of mindfulness including non-judgemental awareness as well as non-reactivity. They found that yoga was the only component of the MBSR intervention that was found to be significantly associated with the facet of mindfulness described as non-judging and it was most strongly associated with improvements in psychological well-being, reduction of stress and psychological symptoms. Although it may be that the body scanning was of assistance in preparation for yoga it may be that both body scan and yoga are effective in increasing interoceptive awareness via neuro plasticity, and this makes sense of the benefits outlined in the literature. Farb et al. [12] suggest that despite interoception being central to our sense of embodiment, and well-being there is limited understanding of interoceptive processes [27]. Intercoception has been conceptualised as a multi-dimensional concept that includes aspects of attention and appraisal, and reaction to sensations [28]. Such that, the perception of body states shapes the response or reaction to those initial sensations. It is crucial to self-regulation and therefore assists the maintenance of a state of homeostasis. It can be argued that interoceptive abilities are important to signal physiological states to alert needs. In acting as a motivator to achieve desired physiological states, Gibson [29] suggests, that there is evidence that some benefits associated with mindfulness practice might be understood as increased interoceptive ability. This is because of neuroplasticity that can be quantified in areas of the brain primarily the insula and surrounding neural circuitry. Rivest Gadbois's [30] narrative review of effects of yoga on body awareness suggests that yoga improves sensory awareness and interoception as well as promoting self-regulation. There is an increase in parasympathetic activity whilst decreasing anxiety and distress associated with pain. Yoga also seems to reduce fear and anxiety related to movement whilst increasing a sense of embodiment. This is possibly due to unlearning maladaptive movements via increased awareness of subtle cues within the body. It has been assumed that sensitivity to internal body sensations serves as a marker of a variety of disorders including anxiety disorder. This suggests that there is an assumption that increased awareness of sensations are distressing or maladaptive. However, it may be that those mental health conditions

How to cite this article: Alice S. Mindfulness Focussed Yoga: The Role of Interoceptive Awareness in Mindfulness and Yoga Interventions for Trauma and Pain. J Yoga & Physio. 2021; 9(1): 555759. DOI: 10.19080/JYP.2021.09.555759

associated with distress and higher anxiety are also associated with hypervigilance and more catastrophic interpretations of sensations, whilst healthy states involve awareness combined with less judgement or more acceptance of sensations. Therefore, the practices of awareness and acceptance present in both mindfulness and yogic practices may target maintaining factors underlying a range of mental health problems.

Conclusion

Contemplative traditions such as mindful via meditative practices including body scanning and yoga both promote an increased awareness of the body and mind, i.e., the embodied self. Being aware and able to observe without reaction, i.e., overriding usual reactions to sensations in the body may assist to unlearn patterns of reactions that fuel distress. Arguably interventions such as Mindfulness focussed Yoga can increase interoceptive awareness and could enable those affected by trauma to better expose or engage with therapies that involve exposure to trauma and the eliciting of emotions associated with it.

References

1. Foa EB, Elizabeth A Hembree, Shawn P Cahill, Sheila AMR, David SR, et al. (2005) Randomized trial of prolonged exposure for posttraumatic stress disorder with and without cognitive restructuring: outcome at academic and community clinics. J Consult Clin Psychol 73 (5): 953-964.
2. McCarthy L, Judith F, Georgina D, Alicia C, Sandro P, et al. (2017) Assessment of yoga as an adjuvant treatment for combat-related posttraumatic stress disorder. Australas Psychiatry 25(4): 354-357.
3. Johnston, JM, Takuya Minami, Deborah Greenwald, Chieh Li, Kristen Reinhardt, et al.(2015) Yoga for military service personnel with PTSD: A single arm study. Psychol Trauma 7(6): 555-562.
4. Macy RJ, Elizabeth Jones, Laurie M Graham, Leslie Roach (2018) Yoga for trauma and related mental health problems: A meta-review with clinical and service recommendations. Trauma Violence Abuse 19(1): 35-37.
5. Rhodes A, J Spinazzola, B van der Kolk (2016) Yoga for adult women with chronic PTSD: A long-term follow-up study. The journal of alternative and complementary medicine 22(3): 189-196.
6. Van der Kolk, BA, Stone L (2014) Yoga as an adjunctive treatment for posttraumatic stress disorder: A randomized controlled trial. J Clin Psychiatry 75(6): e559-65.
7. Cramer H (2018) Yoga for posttraumatic stress disorder-a systematic review and meta-analysis. BMC psychiatry 18(1): 72.
8. Rhodes AM (2015) Claiming peaceful embodiment through yoga in the aftermath of trauma. Complementary therapies in clinical practice 21(4): 247-256.
9. West J, B Liang, J Spinazzola (2017) Trauma sensitive yoga as a complementary treatment for posttraumatic stress disorder: A qualitative descriptive analysis. Int J Stress Manag 24(2): 173-195.
10. Emerson D (2015) Trauma-sensitive yoga in therapy: Bringing the body into treatment, WW Norton & Company, New York, USA.
11. Mehling WE (2012) The Multidimensional Assessment of Interoceptive Awareness (MAIA). Plos one.
12. Farb N, WE Mehling (2015) Interoception, contemplative practice, and health. Fron psycho 6: 763.
13. Herringa R (2012) Post-traumatic stress symptoms correlate with smaller subgenual cingulate, caudate, and insula volumes in unmedicated combat veterans. Psychiatry Res Neuroimaging 203(2-3): 139-145.
14. Mehling WE (2018) A 12-week integrative exercise program improves self-reported mindfulness and interoceptive awareness in war veterans with posttraumatic stress symptoms. Journal of clinical psychology 74(4): 554-565.
15. Neukirch N, S Reid, A Shires (2019) Yoga for PTSD and the role of interoceptive awareness: A preliminary mixed-methods case series study. European Journal of Trauma & Dissociation 3(1): 7-15.
16. Khalsa SS (2009) The pathways of interoceptive awareness. Nat Neurosci 12(12): 1494-1496.
17. Khalsa (2018) Interoception and mental health: a roadmap. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging 3(6): 501-513.
18. Terasawa (2014) Interoceptive sensitivity predicts sensitivity to the emotions of others. Cognition and Emotion 28(8): 1435-1448.
19. Bornemann (2015) Differential changes in self-reported aspects of interoceptive awareness through 3 months of contemplative training. Front psychol 5: 1504.
20. Cayoun BA (2011) Mindfulness-integrated CBT: Principles and practice. Wiley, John Wiley & Sons, New Jersey, USA.
21. Desbordes G (2015) Moving beyond mindfulness: defining equanimity as an outcome measure in meditation and contemplative research. Mindfulness 6(2): 356-372.
22. Cayoun, B, A Simmons, A Shires (2017) Immediate and Lasting Chronic Pain Reduction Following a Brief Self-Implemented Mindfulness-Based Interoceptive Exposure Task: A Pilot Study. Mindfulness, p. 1-13.
23. Zeidan F (2010) The effects of brief mindfulness meditation training on experimentally induced pain. J pain 11(3): 199-209.
24. Shires A, L Sharpe TR Newton John (2019) The relative efficacy of mindfulness versus distraction: The moderating role of attentional bias. European Journal of Pain 23(4): 727-738.
25. Cayoun BA, SE Francis, AG Shires (2018) The Clinical Handbook of Mindfulness integrated Cognitive Behavior Therapy: A Step-by-step Guide for Therapists. Wiley-Blackwell, New York, USA.
26. Carmody (2009) An empirical study of the mechanisms of mindfulness in a mindfulness- based stress reduction program. Journal of clinical psychology 65(6): 613-626.
27. Hanley AW, WE Mehling, EL Garland (2017) Holding the body in mind: Interoceptive awareness, dispositional mindfulness and psychological well-being. J psychosom Res 99: 13-20.
28. Verdejo Garcia A, L Clark, B D Dunn (2012) The role of interoception in addiction: a critical review. Neuroscience & Biobehavioral Reviews 36(8): 1857-1869.
29. Gibson J (2019) Mindfulness, Interoception, and the Body: A Contemporary Perspective. Front psychol 10: 2012.
30. Rivest Gadbois E, MH Boudrias (2019) What are the known effects of yoga on the brain in relation to motor performances, body awareness and pain? A narrative review. Complement Ther Med 44:129-142.

How to cite this article: Alice S. Mindfulness Focussed Yoga: The Role of Interoceptive Awareness in Mindfulness and Yoga Interventions for Trauma and Pain. J Yoga & Physio. 2021; 9(1): 555759. DOI: 10.19080/JYP.2021.09.555759

DOI: 10.19080/JYP.2021.09.555759

How to cite this article: Alice S. Mindfulness Focussed Yoga: The Role of Interoceptive Awareness in Mindfulness and Yoga Interventions for Trauma and Pain. J Yoga & Physio. 2021; 9(1): 555759. DOI: 10.19080/JYP.2021.09.555759