

The Physical Health, Mental Health and Well-Being Benefits of the Nia Technique

Robin List

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Abstract

This article presents the first evidence-based research study to analyze the physical health benefits, mental health benefits, and well-being benefits of the Nia Technique, an experiential movement therapy, on class participants. The aim of the research project was to capture the thoughts of Nia participants immediately after their class experience to best understand Nia's physical health benefits, mental health benefits, and well-being benefits both quantitatively and qualitatively. The sample collected was a total of 56 healthy adults voluntarily attending Nia classes at 5 different, local YMCA facilities or private studios geographically located near a large city in the mountain west. The results showed that Nia had a positive effect on the health and well-being of almost all participants. Overall, 98% of participants agreed or strongly agreed they felt better in their physical body after participating in Nia. All participants (100%) agreed or strongly agreed their mood improved at the conclusion of participating in Nia. Almost all participants (96%) agreed or strongly agreed they creatively expressed their unique selves during class. All participants (100%) agreed or strongly agreed they released stress during class. Most participants (89%) agreed or strongly agreed they connected with at least one other person during class. The vast majority, 69.3% of participants reported using Nia class skills in their daily life between classes. A larger, more diverse sample size post COVID would be beneficial to further illuminate the benefits of Nia.



Keywords: Nia, dance, healing, movement therapy, experiential therapy, physical health benefits, mental health benefits, well-being benefits

1. Introduction

1.1 Introduce the Problem

This article presents the first evidence-based research study to analyze the physical health benefits, mental health benefits, and well-being benefits of the Nia Technique \mathbb{R} , an experiential movement therapy, on class participants.

1.2 Explore Importance of the Problem

Nia was created in 1983 during the height of the aerobics craze (Rosas, 2004). It originally stood for Non-Impact Aerobics, developed in response to the injuries high-impact aerobics frequently caused (Rosas, 2004). Today, Nia continues to prioritize a "do no harm" exercise philosophy which is congruent to prescribed medical ethics (Rosas, 2004). Nia invites students to hone awareness of how their bodies' feel, enhancing their *interoceptive* ability, or the processing of internal sensory stimuli (Hindi, 2021; van der Kolk, 2014). Nia students are invited to modify the instructor's choreography in order to "move towards pleasure", so that they can listen to their bodies' needs (Rosas, 2004). Nia is founded on the belief that choosing mindful physical movement safely fosters healing (Rosas, 2004). Instead of mentally overriding the body's voice, or pushing through physical pain, Nia encourages participants to deeply attune to how their current body wants to move in the present moment (Rosas, 2004). Similar to van der Kolk's (2014) understanding of body, mind, and emotional healing through movement, Nia encourages students to listen to their unique body's voice, and thereby carries the potential to enhance physical fitness, strengthen mental health, and access the spiritual/emotional experience of connectedness (Rosas, 2004).

1.3 Describe Relevant Scholarship

The Nia Technique draws from nine movement forms including: Dance Arts (Duncan, Modern, and Jazz), Martial Arts (Aikido, Tai Kwon Do, and Tai Chi) and Healing Arts (Yoga, Alexander Technique, and Feldenkrais) (Rosas, 2004). The Nia Technique combines diverse modalities to create a holistic physical and mental fitness program designed to heal the whole person (Rosas, 2004). Nia provides a thorough physical workout while facilitating mental well-being (Rosas, 2004). It is a fusion fitness program that invites participants to transform both on and off the dance floor—it provides a philosophy for living healthy in the world (Rosas, 2004). It invites participants to unleash their unique creativity and encourages playful expression (Rosas, 2004). For example, classes may invite students to play sword fight, use guided imagery to enhance the visualization, or even to free dance and choose the unique movement of the moment (Rosas, 2004). The same class may encourage students to mindfully restore their "energy batteries" through balancing yin/yang movement harmony (Rosas, 2017). Nia participants dance in community and are encouraged to meaningfully connect with the music, the movement, and to invite playful discovery with one another (Rosas, 2014).



Nia classes are 60-minute cardio-dance workouts set to diverse music selections (Rosas, 2004). Nia is practiced with the comfort of every student in mind and is danced barefoot to integrate the myriad bones, muscles, and tendons of the feet into the dance (Rosas, 2004). This is an adaptable, flexible practice in which licensed, certified instructors adjust the moves to meet individual abilities (Rosas, 2004). Nia has 52 moves that incorporate movement throughout the whole body (base, core, upper extremities) choreographed with awareness for participant's choice of how vigorously to move (levels 1-3) and within the context of moving on bare feet, as well as using the whole body to move on the floor.

Health Benefits

Though Nia is just beginning to be scientifically researched, the therapeutic benefits of dance and movement have been well documented. From the literature, the health benefits of dance and movement therapy include: improved attention span (Hopkins, 2020), reduction of body tensions (Laia Jorba Galdos & Marcia Warren, 2021), elevated pain thresholds (Tarr, 2016), promotion of healthy behavior (Garcia-Medrano & Panhofer, 2020), improved balance (Hackney, 2007; Lovatt, 2021), increased healing (Lauffenburger, 2021) and the promotion of body awareness (Garcia-Medrano & Panhofer, 2020, Hindi, 2012).

Mental Health Benefits

The scientifically documented mental health benefits of dance and movement therapy include: increased identity development (Erickson, 2021; Hopkins, 2020), improved consciousness skills (Hopkins, 2020), enhanced ability to make meaning of internalized experiences (Victoria, 2012), ability to express emotions (Lauffenburger, 2021), decrease in psychological distress (Jeong, 2009) and decrease in mood disorder symptoms (Lovatt, 2021). Dance and movement therapy further the emotional, cognitive, physical, and social integration of the individual (ADTA, 2009). It also supports the complexities of living with multiple identities (Laia Jorba Galdos & Marcia Warren, 2021), helps with somatic memories (Ogden, Taylor, Jorba, & Choi, 2021) and improves processing of non-verbal communication including micro aggressions (Laia Jorba Galdos & Marcia Warren, 2021). Dance and movement therapy has been found to decrease depression (Mesika, Wengrower & Maoz, 2021; Weir, 2011), decrease fear of falling (Lovatt, 2021), decrease social isolation (Weingroth, 2018) and reduce effects of trauma (Baum, 2020; Jorden, 2021; Lauffenburger, 2021; Schaeffer & Cornelius-White, 2021).

Well-Being Benefits

Dance and movement therapy increase well-being (Garcia-Medrano & Panhofer, 2020), as well as increase self-esteem (Laia Jorba Galdos & Marcia Warren, 2021), and sense of empowerment (Hopkins, 2020). Dance and movement therapy have been found to increase confidence (Carney, 2010; Garcia-Medrano & Panhofer, 2020), creativity (Lauffenburger, 2021), friendship (Laia Jorba Galdos & Marcia Warren, 2021), social closeness (Tarr, 2016), and spontaneity (Garcia-Medrano & Panhofer, 2020).



1.4 State Hypotheses and Their Correspondence to Research Design

The aim of the research project was to capture the thoughts of Nia participants immediately after their class experience to best understand Nia's physical health benefits, mental health benefits, and well-being benefits both quantitatively and qualitatively. The hypothesis is that Nia will have a positive effect on class participants.

2. Method

2.1 Sample

The sample collected was a total of 56 healthy adults voluntarily attending Nia classes at 5 different, local YMCA facilities or private studios geographically located near a large city in the mountain west. Due to the onset of COVID, and the inability to teach the class face to face, the research was ceased. The age of participants ranged from 18-80 with a median age of 51 years old. All classes were taught by the same instructor, so that differences in teaching style or personality did not influence the results. The vast majority of the participants (96%) self-identified as female. Participants also self-identified as Caucasian (89.1%), Latino/a/Hispanic (6.5%), Native American (2.2%) and Asian (2.2%).

2.2 Design

All participants voluntarily completed a full 55-60 minute Nia class. Classes were crafted by Nia Technique faculty and include choreography created to consciously match the pre-selected music playlists. Routines were changed weekly. Participants were encouraged to tweak the class to meet their body's abilities, in the present moment. For example, students preferring to take class seated or wearing shoes are encouraged to do so, although the majority of students moved barefoot and standing.

Following their participation in a full-length Nia class, the instructor verbally explained informed consent and participants were asked to fill out a confidential questionnaire. On average, the questionnaire took 5-10 minutes to complete. Students were notified that participation was voluntary and that no special attention would be provided for completion nor would negative repercussions be incurred for declining.

2.3 Instrument

The survey tool was created by the researchers to mindfully capture participants' experiences both during and after the Nia class format. Researchers crafting the survey tool themselves brought both decades of social science academic research as well as insights from approximately 10 years of teaching Nia to create the research tool. Therefore, it has content validity and face validity. The Nia survey tool consisted of six 5-point Likert scale questions, 2 open-ended questions, and an open-ended report of demographics (age, gender, race/ethnicity).

The Likert scale questions were as follows: 1. I felt better in my physical body; 2. My mood improved; 3. I creatively expressed my unique self; 4. I released stress; 5. I connected with at least one other person; 6. I used Nia skills in my life. All Likert questions were answered on a



1-5 Likert scale from 5 indicating 'strongly agree' to 1 equating to 'strongly disagree.' The two open-ended questions included: 1. What was most meaningful to you? and 2. Comment about your class experience.

3. Results

3.1 Quantitative Results

The results showed that Nia had a positive effect on the health and wellbeing of almost all participants. Overall, 98% of participants agreed or strongly agreed they felt better in their physical body after participating in Nia. All participants (100%) agreed or strongly agreed their mood improved at the conclusion of participating in Nia. Almost all participants (96%) agreed or strongly agreed they creatively expressed their unique selves during class. All participants (100%) agreed or strongly agreed they released stress during class. Most participants (89%) agreed or strongly agreed they connected with at least one other person during class. The vast majority, 69.3% of participants reported using Nia class skills in their daily life between classes.

3.2 Qualitative Results

Nia class participants responded to the open-ended survey questions, "What was most meaningful to you" and "Comment about your class experience" with overwhelmingly positive reactions. No negative or distressing comments were captured. One student noted, "My body feels great with the movement, and I feel the energy moving and dancing around me." Students also explained that the Nia class experience provided "total body movement," "mind-body-soul connection," and "connecting my mind, spirit, and body as one flowing whole." Students explained the class provided an environment in which they felt "free to express physical and emotional creativity". Students explained that Nia helped them feel, "like a kid at recess."

4. Discussion

The purpose of this study was to evaluate Nia's effect on the physical health, mental health, and well-being of those participating in Nia classes. Results showed that participants overwhelmingly experienced positive physical health, mental health and greater well-being due to Nia.

4.1 Physical Health

The physical health questions: I felt better in my physical body post Nia (98% in agreement) and I released stress during Nia (100% in agreement) both point to Nia as an extremely effective intervention to enhance physical health. Nia encourages participants to tune into their physical experience and notice or witness how their bodies feel in response to varied movement stimuli (Aguirre, 2013; Rosas, 2004, Rosas 2013). Nia classes feature five different types of movement including Flexibility, Agility, Mobility, Strength, & Stability (FAMSS) (Rosas, 2013). Consciously, involving these five types of movement seems to support participants' perception of improved physical health. Other research has found similar positive results regarding agility (Lovatt, 2021; Sheppard & Young, 2006). However,



the combination of all five types of movement seems to make Nia particularly efficacious.

By encouraging students to embrace their felt somatic experience, Nia hones students' interoception skills and may improve their subjective body image (Burgess, 2006). Interoception, defined as "the perception of the state of the body" (Ceunen, 2016) has increasingly been found instrumental to improved perception of physiological disease-specific symptoms (Schandry, 1993, Tsakiris, 2011). Individuals with heightened interoception capabilities were found to have improved self-awareness including improved emotional regulation abilities (Craig, 2003; Barrett, 2004; Critchley, 2004; Herbert, 2011). Students' qualitative responses appear to indicate Nia heightened their self-awareness of their physical bodies and how their bodies connect to mind, emotions, spirit, and even one another.

4.2 Mental Health

The mental health question: My mood improved (100% in agreement) is a strong affirmation of the benefit of Nia. It can be speculated that Nia's focus on adaptive or choice-based movement may also stimulate new neural pathways as participants are encouraged to notice and then intentionally interrupt habitual movement patterns, break out of ruts and 'change' how they move their physical bodies (Aguirre, 2013). Nia instructors encourage students to intentionally sense parts of their bodies as they partake in the movement practices, deepening their awareness of their bodies' ability to diversify movement (Rosas, 2013). Nia takes interoception one step further and encourages students to tweak their physical movements to increase a felt sense of enjoyment or "pleasure in their body" (Rosas, 2013). Nia prioritizes empowered sensation choices–feeling deeply in order to self-heal (Rosas, 2004 & Rosas, 2014). Qualitative responses indicated numerous students perceived Nia heightened their connections between mind, body, and even "soul" and "spirit." Numerous students commented they felt increased connections to their own bodies as well as to those "dancing around me too."

4.3 Well-Being

The two well-being questions: I creatively expressed my unique self (96% agreement) and I connected with at least one other person (89% agreement) also point to strong increases in well-being. All of Nia's nine movement forms have been individually studied for their impact on participants' well-being (Rukovets, 2013). Tai Chi in particular has been shown to effectively improve balance, increase pain tolerance thresholds, and reduce fear of falling in community-dwelling senior citizen populations (Hosseini, 2018 & Rukovets, 2013). Nia instructors have long noticed anecdote that students report increased confidence, strength, and endurance as well as decreased depression and anxiety (Hackney, 2007; Rukovets, 2013). Nia inspires students to joyfully embrace how their present, "now" bodies feel vs. more traditional exercise's emphasis on obtaining a new or altered body (Rosas, 2004). Qualitative replies specified how Nia felt like "having fun" and they remarked the Nia class felt "like a kid at recess."



4.4 Integrating Nia Outside of Class

The sixth question, I used Nia skills in my life had a 69.3% agreement. Overall, the residual effect of Nia had on its participants could be felt way beyond the dance floor. Studies measuring the impact of moderate aerobic exercise on creativity have shown participants are likely to have increased creative potential immediately after moderate aerobic exercise (Blanchette, 2005; Lovatt, 2021). Interestingly, dancers' creative potential was found to extend even several hours post-exercise, when measured by a problem-solving test given post aerobic exercise intervention (Blanchette, 2005; Lovatt, 2021). Furthermore, research has demonstrated that dancers who engaged in creative movement without synchronous choreography were additionally shown to have increased divergent thinking (Lovatt, 2021). "Change the way you move, and you will change the way you think" has been proven to be the case (Lovatt, 2021, p. 81). Nia's nine movement forms and 5 energy varieties or FAMSS offer movement varieties and increase potential creativity and individual expression (Rosas, 2013; Reis, 2014).

5. Conclusion

Participants reported that movement assists them in becoming unstuck physically and mentally; allowing emotions to move through the body as they physically move (Rosas, 2013). Results show that Nia offers physical, mental health and increased well-being on and off the dance floor.

Limitations

As this evaluation tool captured groups of students who were already voluntarily attending Nia classes in local YMCA and private studios, the data could have some selection bias. A larger, more diverse sample size post COVID would be beneficial to further illuminate the benefits of Nia.

Future Research

Future research into the Nia technique would benefit from analyzing the impact on a broader student group inclusive of more gender, racial, identity, and ethnic diversity; especially as it pertains to the impact Nia could have on health disparities amongst communities of color. Additionally, Nia's physical emphasis on choice has powerful implications for further research on Nia as a trauma-informed movement practice (Baum, 2020). Especially as participants are invited to choose how they physically move and to what level of exertion, Nia philosophically aligns with trauma recovery treatments like Trauma Sensitive Yoga (West, 2017) and experiential therapy (Laser & Nicotera, 2021; Laser-Maira & Nicotera, 2019; Nicotera & Laser-Maira, 2017). Additionally, research on complex trauma has shown how persons living with posttraumatic stress disorder (PTSD) may present as detached or dissociated from their bodies. Trauma survivors may lack proprioception awareness of or trusted relationship with their physical body, especially if their body was involved in their experienced trauma (van der Kolk, 2015). Nia invites participants to choose empowered physical movement, never forcing them to go beyond comfortable sensation to reconnect safely to their bodies and repair their body/mind health (Emerson, 2015; West, 2017).



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References

ADTA (American Dance Therapy Associuation) (2009). *What is dance/movement therapy*? Retrieved from https://adta.org/faqs

Aguirre, J. (November 8, 2013). Hemophilia Federation of America (https://hemophiliafed.org). "Go from 'Monkey mind' to 'Super brain' with Nia!"

Baum, R. (2020). Integrated care for the traumatized: a whole person approach. *Body, Movement* and *Dance* in *Psychotherapy,* 15(2), 127-131. https://doi.org/10.1080/17432979.2020.1724194

Blanchette, D. M., Ramocki, S. P., O'del, J. N., & Casey, M. S. (2005). Aerobic exercise and creative potential: Immediate and residual effects. *Creativity Research Journal*, *17*(2-3), 257-264. https://doi.org/10.1080/10400419.2005.9651483

Carney, D. R., Cuddy, A. J., & Yap, A. J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological science*, *21*(10), 1363-1368. https://doi.org/10.1177/0956797610383437

Ceunen, E., Vlaeyen, J. W., & Van Diest, I. (2016). On the origin of interoception. *Frontiers in psychology*, *7*, 743. https://doi.org/10.3389/fpsyg.2016.00743

Pass Erickson, L. M. (2021). Sensing the self: a dance/movement therapy model of embodied identity development. *Body, Movement and Dance in Psychotherapy*, *16*(3), 202-217. https://doi.org/10.1080/17432979.2020.1850524

Fischer, D., Messner, M., & Pollatos, O. (2017). Improvement of interoceptive processes after an 8-week body scan intervention. *Frontiers in human neuroscience*, *11*, 452. https://doi.org/10.3389/fnhum.2017.00452

Hackney, M. E., Kantorovich, S., Levin, R., & Earhart, G. M. (2007). Effects of tango on functional mobility in Parkinson's disease: a preliminary study. *Journal of neurologic physical therapy*, *31*(4), 173-179. https://doi.org/10.1097/NPT.0b013e31815ce78b

Hillier, S., & Worley, A. (2015). The effectiveness of the feldenkrais method: a systematic review of the evidence. *Evidence-Based Complementary and Alternative Medicine*, 2015. https://doi.org/10.1155/2015/752160

Hindi, F. S. (2012). How attention to interoception can inform dance/movement therapy. *American Journal of Dance Therapy*, 34(2), 129-140. https://doi.org/10.1007/s10465-012-9136-8



Hopkins, C. (2020). Bodyfulness: somatic practices for presence, empowerment, and waking up n this life. *Body, Movement and Dance in Psychotherapy, 15*(1), 68-71, https://doi.org/10.1080/17432979.2019.1706638

Hosseini, L., Kargozar, E., Sharifi, F., Negarandeh, R., Memari, A. H., & Navab, E. (2018). Tai Chi Chuan can improve balance and reduce fear of falling in community dwelling older adults: a randomized control trial. *Journal of exercise rehabilitation*, *14*(6), 1024. https://doi.org/10.12965/jer.1836488.244

Garcia-Medrano, S. & Panhofer, H. (2020). Improving migrant well-being: spontaneousmovement as a way to increase the creativity, spontaneity and welfare of migrants in Glasgow. *Body, Movement and Dance in Psychotherapy, 15*(3), 189-203, https://doi.org/10.1080/17432979.2020.1767208

Janata, P., Tomic, S. T., & Haberman, J. M. (2012). Sensorimotor coupling in music and the psychology of the groove. *Journal of Experimental Psychology: General*, *141*(1), 54. https://doi.org/10.1037/a0024208

Jeong, Y.J., Hong, S. C., Lee, M. S., Park, M. C., Kim, Y. K., & Suh, C. M. (2004). Dance ovement therapy improves emotional responses and modulates neurohormones in dolescents with mild depression. *International Journal of Neuroscience*, *115*(12), 171-20 https://doi.org/10.1080/00207450590958574

Jorden, T. (2021). Acknowledging the past :trauma-informed social justice & dance movement therapy. *Body, Movement and Dance in Psychotherapy, 16*(2), 126-139. https://doi.org/10.1080/17432979.2021.1883740

Kedem, D. & Regev, D. (2021). Parent-child dance and movement therapy (PCDMT): mothers' subjective experiences. *Body, Movement and Dance in Psychotherapy, 16*, 2, 136-149. https://doi.org/10.1080/17432979.2021.1896579

Koch, S. C., Morlinghaus, K., & Fuchs, T. (2007). The joy dance: specific effects of a single ance intervention on psychiatric patients with depression. *The Arts in Psychotherapy*. https://doi.org/10.1016/j.aip.2007.07.001

Lacson, F. C. (2020). Embodied attunement: a dance/movement therapy approach to working with couples. *Body, Movement and Dance in Psychotherapy, 15, 1, 4-19.* https://doi.org/10.1080/17432979.2019.1699859

Laia, J. G., & Marcia, W. (2021). The body as cultural home: exploring, embodying, and navigating the complexities of multiple identities. *Body, Movement and Dance in Psychotherapy*. https://doi.org/10.1080/17432979.2021.1996460

Lane, A. M., & Lovejoy, D. J. (2001). The effects of exercise on mood changes: the moderating effect of depressed mood. *Journal of Sports Medicine in Physical Fitness*, *41*, 539-45.

Laser, J., & Nicotera, N. (2021). *Working with Adolescents: A Clinical Guide for Practitioners* (2nd ed.). New York: Guilford Press.



Laser-Maira, J., & Nicotera, N. (2019). *Innovative Skills to Increase Cohesion and Communication in Couples*. New York: Oxford University Press.

Lauffenburger, S. K. (2021). Dance and creativity within dance movement therapy: international perspectives. *Body, Movement and Dance in Psychotherapy*. https://doi.org/10.1080/17432979.2021.1920463

Lewis, C., Annett, L. E., Davenport, S., Hall, A. A., & Lovatt, P. (2016). Mood changes following social dance sessions in people with Parkinson's disease. *Journal of Health Psychology*, *21*(4), 483-492. https://doi.org/10.1177/1359105314529681

Lovatt, P. (2021). The Dance Cure: The Surprising Science to Being Smarter, Stronger, Happier. HarperCollins.

Lotan Mesika, S., Wengrower, H., & Maoz, H. (2021). Waking up the bear: dance/movement therapy group model with depressed adult patients during Covid-19 2020. *Body, Movement and Dance in Psychotherapy*, *16*(1), 32-46. https://doi.org/10.1080/17432979.2021.1879269

Nicotera, N., & Laser-Maira, J. (2017). *Innovative Skills to Support Well-being and Resiliency in Youth*. New York: Oxford University Press.

Ogden, P., Taylor, S., Jorba, L., Rodriguez, R., & Choi, M. (2021). Sensorimotor psychotherapy in context: Sociocultural perspectives. In P. Ogden (Ed.), *The pocket guide to sensorimotor psychotherapy in context* (pp. 1-73). Norton.

Reis, D., Walsh, M. E., Jones, T., & Young-McCaughan, S. (2014). A review of nia as an exercise option for cancer survivors. *Clinical Journal of Oncology Nursing*, *18*(6). Retrieved from https://docksci.com/a-review-of-nia-as-an-exercise-option-for-cancer=survivors_5a7e659dd64ab2bec20c7e54.html

Rosas, D., & Rosas, C. (2004). The Nia Technique. New York, NY: Broadway Books.

Rosas, D. (2013). Nia Art of Sensation White Belt Learn Manual. Portland, OR: Nia Technique, Inc.

Rosas, D. (2014). *Nia Art of Communication Blue Belt Learn Manual*. Portland, OR: Nia Technique, Inc.

Rosas, D. (2017). *Nia Art of Perception Brown Belt Learn Manual*. Portland, OR: Nia Technique, Inc.

Rukovets, O. (2013, April/May). *The Uplifting Effects of Nia Fitness Training*. In Exercise portion of https://www.brainandlife.org/articles/nia-for-parkinsons-disease/

Schaeffer, A., & Cornelius-White, J. (2021). Qualitive studies on body-based interventions for refugees: a meta-synthesis. *Body, Movement and Dance in Psychotherapy, 16*(1), 39-49. https://doi.org/10.1080/17432979.2021.1893810

Schandry, R., Bestler, M., & Montoya, P. (1993). On the relation between cardiodynamicsandheartbeatperception.*Psychophysiology*,30,467-474.



https://doi.org/10.1111/j.1469-8986.1993.tb02070.x

Sheppard, J. M., Young, W. B., Doyle, T. L., Sheppard, T. A., & Newton, R. U. (2006). An evaluation of a new test of reactive agility and its relationship to sprint speed and change of direction speed. *Journal of Science & Medicine in Sport*, 9(4), 342-9. https://doi.org/10.1016/j.jsams.2006.05.019

Sullivan, M. B., Erb, M., Schmalzl, L., Moonaz, S., Noggle Taylor, J., & Porges, S. W. (2018). Yoga therapy and polyvagal theory: The convergence of traditional wisdom and contemporary neuroscience for self-regulation and resilience. *Frontiers in human neuroscience*, 67. https://doi.org/10.3389/fnhum.2018.00067

Tarr, B., Launay, J., & Dunbar, R. I. (2016). Silent disco: dancing in synchrony leads to elevated pain thresholds and social closeness. *Evolution and Human Behavior*, 37(5), 343-349. https://doi.org/10.3389/fpsyg.2014.01096

Tsakiris, M., Jiménez, A. T., & Costantini, M. (2011). Just a heartbeat away from one's body: interoceptive sensitivity predicts malleability of body-representations. *Proceedings of the Royal Society B: Biological Sciences*, 278(1717), 2470-2476. https://doi.org/10.1098/rspb.2010.2547

Van der Kolk, B. (2014). *The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma*. Penguin Publishing Group.

Victoria, H. (2012). Creating dances to transform inner states: a choreographic model in dance/movement therapy. *Body, Movement and Dance in Psychotherapy,* 7,1, 167-183. https://doi.org/10.1080/17432979.2011.619577

West, J., Liang, B., & Spinazzola, J. (2017). Trauma sensitive yoga as a complementary treatment for posttraumatic stress disorder: A qualitative descriptive analysis. *International Journal of Stress Management*, 24(2), 173. https://doi.org/10.1037/str0000040

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