

*Editorial*

## **Cross-Cultural Research for the Application of Mind-Body Practices: The Case of Creating Specialized Tai Chi Therapies**

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Chronic diseases, such as cardiovascular disease, cancer, rheumatoid arthritis, and pulmonary disease, and mental health issues, such as depression, anxiety, and drug addiction, have reached crisis levels around the world. Because these non-communicable diseases are impacted by aging and lifestyle, the paradigm of modern health care has shifted from institutionally driven treatments based on the biomedical model of health to active changes in individual behaviors based on an integrative medicine perspective.

Many of the mind-body practices that are receiving recent attention for their potential as effective and inexpensive treatments originate from non-Western cultures and medical systems. Thus, incorporating these complementary practices into our medical system is fraught with many systemic, administrative, and cultural challenges. Here, I advocate for a cross-cultural approach in overcoming another challenge—the lack of standardization—focusing on the example of Tai Chi.

Tai Chi is a centuries-old Chinese martial art and health exercise. Hundreds of clinical studies reveal substantial health benefits for chronic diseases, mental health issues, and cognitive decline (Huston & McFarlane, 2016). As a moderate-level aerobic exercise (Lan et al., 2008), Tai Chi involves a calm and attentive state of mind. The complex whole-body movement sequences also require learning and

coordination processes. A dominant biomedical model of Tai Chi health benefits centers on psychoneuroimmunological mechanisms in which enhanced blood flow (El-Sayes et al., 2019) and stress reduction (Taylor-Piliae et al., 2006) slow the progression of autoimmune chronic diseases by downregulating excessive inflammation (Figuroa et al., 2012). In addition, functional, structural, and molecular level neuroplasticity is theorized to reduce cognitive decline associated with aging and neurodegenerative diseases (see Park et al., 2022 for a discussion). Finally, biomechanical characteristics of Tai Chi movements are thought to improve muscle strength and coordination, which then support better posture, balance, bodily control, and quality of life (Zhou et al., 2019).

These explanations help us gain a general understanding of Tai Chi health benefits. Unfortunately, they are limited when it comes to addressing serious obstacles to developing Tai Chi treatments. First, the health benefits of Tai Chi in clinical studies are highly variable, and sometimes, even non-existent (Jahnke et al., 2010). The lack of a formal system of standards for the practice or teaching of Tai Chi makes it difficult to compare among the many different Tai Chi routines and styles. Moreover, Tai Chi is practiced and taught at widely varying movement speeds, degree of muscle involvement and stretching, and movement kinematics, not to mention breathing and mental

states. Unfortunately, we lack a theoretical system for predicting the effectiveness of specific Tai Chi regimens in addressing specific health issues.

A second obstacle to developing Tai Chi treatments is that a typical Tai Chi routine is composed of a long sequence of whole-body movements. The difficulty in learning and carrying out the movement sequence hinders its application to children, older adults, and those with cognitive deficits.

How can these challenges be addressed? It is proposed here that the Western biomedical theories of Tai Chi health mechanisms should be complemented by explorations of the East Asian medical, contemplative, and martial arts traditions from which Tai Chi originated. My colleagues and I have turned to Traditional East Asian Medicine to identify principles that would guide us in creating Tai Chi treatments that maximize health benefits. Three concepts appear to be especially relevant:

First, the accumulation, circulation, and utilization of bodily energy, called ‘Qi’, through interoceptive awareness is a key concept in the instruction of Tai Chi—both as a health exercise and as a martial art. A second emphasis lies in the role of mindfulness in linking mental health and intention, on the one hand, and bodily movement and physiology, on the other. A third element has to do with the channels of Qi and blood flow, called ‘meridians’, and their muscle equivalents, called ‘meridian muscles’. Briefly, in Traditional East Asian Medicine, the meridians are organic systems that connect the organs and functional systems of the whole

body. They occupy the center of the basic theoretical system of physiology, diagnosis, and treatment in Traditional East Asian Medicine (Department of Meridian and Acupoint, Korean Medical College, 2009).

Currently, my colleagues in South Korea, Hwajin Lee, Jong-Woo Kim, Hi-Joon Park, Seok-In Yoon, and Hyowon Seo, and I are analyzing individual Tai Chi movements in terms of the meridians they would stimulate. Our work shows that each Tai Chi movement would stimulate multiple of the ‘Twelve Regular Meridians’ and that a popular Tai Chi routine, like the ‘Yang-Style 24 Forms’, would likely lead to the balanced activation of the entire meridian set. An advantage of our approach is that the outcome of the theoretical analysis can be subjected to empirical testing through electromyographic (EMG) muscle activation studies. Importantly, individual Tai Chi movements can be identified that emphasize certain meridians favorable for addressing a specific health issue. Ultimately, our goal is to develop a small set of Tai Chi movements tailored for patients with depression. Indeed, the same approach could be applied to creating Tai Chi routines for a variety of patient populations, including those with anxiety, arthritis, or cardiovascular disease.

In closing, I would suggest that a cross-cultural approach might also facilitate the application of other mind-body practices, such as yoga or mindfulness meditation, in other ways. Ultimately, such efforts would expand the boundaries of science to further enrich our foundational understanding about the operating dynamics between the mind and the body.

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