

Research on the Traditional Core Area Strength Training Method of Taijiquan

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Abstract: *Taijiquan Chuan stands as a gem of traditional Chinese martial arts, having evolved over centuries to develop a distinctive theoretical framework and training methodology. Core strength is pivotal to the techniques of Taijiquan Chuan, with its intensity and stability directly influencing the application of techniques and the harmonization of body and mind. Traditional Taijiquan Chuan core strength training methods, such as standing postures, push hands, equipment training, and form practice, not only embody ancient martial wisdom but also demonstrate their efficacy in enhancing physical balance, stability, and power transmission through practical application. This article analyzes and summarizes traditional core strength training methods and their applications in Taijiquan Chuan, integrating modern training concepts to propose scientifically effective training measures. It aims to provide both theoretical and practical references for Taijiquan enthusiasts and instructors. The study seeks to explore the effectiveness of traditional strength training methods and their potential applications in contemporary health and competitive arenas, fostering the inheritance and innovation of Taijiquan Chuan training techniques.*

Keywords: *Taijiquan; core area strength; traditional training methods*

1. Introduction

Taijiquan originated in China, and after centuries of development, it has become a comprehensive sport that integrates martial arts, fitness and health care. Its core concepts are rooted in the Chinese philosophical doctrines of yin and yang and the five elements, emphasizing internal and external cultivation and the combination of movement and static. With the wide spread of Taijiquan around the world, more and more researchers and practitioners have begun to pay attention to its core strength training methods. Core area strength is an important foundation to support Taijiquan techniques, which not only involves the smoothness and stability of movements, but also plays a crucial role in the overall control and coordination of the body. Currently, the development and strengthening of core area strength in Taijiquan training relies mainly on traditional methods, such as staking, hand pushing and instrument training. With their unique philosophical background and physical exercise patterns, these methods have inherited the cultural heritage of taijiquan and also demonstrated excellent results in practical application. However, with the development of the times, how to optimize and innovate these traditional training methods under the guidance of modern health concepts and exercise science has become an urgent topic to be explored.

2. Basic Theory of Taijiquan

2.1. The Philosophical Foundations of Taijiquan Theory

The foundational theory of Taijiquan originates from ancient Chinese philosophical thought, particularly the doctrines of Yin-Yang and the Five Elements. These theories emphasize the relationship between opposites and unity within the natural world, with Taijiquan manifesting this balance and harmony through its movements. The alternating transformation of Yin and Yang is reflected in the tension and relaxation, as well as the interplay of emptiness and solidity in each movement, embodying the core principle of internal and external cultivation. Taijiquan aims to achieve the accumulation and release of power through gentle, deliberate motions; this principle of "using softness to overcome hardness" is not only a demonstration of physical skill but also a profound integration of mind and body. The structure of Taijiquan movements emphasizes smooth, rounded execution, focusing on "qi sinking to the dantian," which represents not only the regulation of breath but also the concentration of core

strength. Through continual practice, practitioners can achieve internal and external balance and enhance their control over both body and breath. The fundamental theory of Taijiquan serves as both a guiding principle for its techniques and a philosophical foundation for cultivating the mind and improving physical fitness.

2.2. Definition and importance of the core area

In Taijiquan, the core region typically refers to the central axis of the body, encompassing the waist, abdomen, back, and pelvis. This area plays a pivotal role in Taijiquan movements; it is not only the source of bodily strength but also the center for the transmission and transformation of power. During Taijiquan practice, the core region is responsible for stabilizing the body, controlling posture, and regulating breath, making it a crucial hub where "force originates from the feet, passes through the waist, and reaches the limbs." The importance of core strength lies in its ability to effectively transmit the power from the lower limbs to the upper limbs, ensuring that movements are coordinated and fluid. This is not merely a matter of muscular strength but also a manifestation of the unity of internal and external forces. Without robust core support, Taijiquan movements can appear stiff or disjointed, lacking the desired smoothness and cohesiveness. Through core training, practitioners can better control their center of gravity and maintain balance during movements, especially in push hands or combat situations. The strength of the core is crucial for neutralizing an opponent's attacks and maintaining a stable body posture. Additionally, the strength of the core directly affects breath regulation and the precision of force application. Taijiquan emphasizes "qi sinking to the dantian," which is the energy center of the core region. Once the breath settles here, it can be transmitted through core strength to the limbs. Therefore, core strength is not only reflected in external movements but also relies on the stability and strength of this area for internal breath flow. The significance of core training lies in its role as both a key to enhancing physical fitness and the foundation of Taijiquan's internal skill development [1].

3. Traditional Strength Training Methods

3.1. Standing Pile Training

The practice of standing meditation demands that practitioners maintain a specific posture while remaining stationary. This seemingly motionless exercise actually places an immense demand on the strength of the core region. Through standing meditation, practitioners can experience the flow of power in stillness, enhance their control over the waist and abdomen, and gradually improve overall bodily stability and the continuity of inner energy. The essence of standing meditation lies in the union of intent and body. While maintaining a stable posture, the inner focus is directed toward the core region. This prolonged stillness not only enhances muscular endurance but also strengthens the practitioner's sense of control over their center of gravity. During standing meditation, the strength of the waist and abdomen becomes pivotal in sustaining bodily balance, with core strength extending through the spine to unify the entire body. This internal force transmission helps practitioners experience the accumulation and application of internal strength while remaining stationary. The unique aspect of standing meditation is its dual benefit: it not only develops external muscular strength but also enhances internal energy flow. The principle of sinking the breath into the dantian is fully embodied in standing meditation, with the dantian serving as the central point for energy concentration and reinforcement. Through this deep stillness, practitioners can experience the sinking of breath and the condensation of internal strength, laying a solid foundation for the dynamic training of Taijiquan.

3.2. Push hands training

The practice of push hands is a vital component of traditional Taijiquan strength training, characterized by its remarkable practicality and technical sophistication. It transcends mere skillful sparring, evolving into a profound process of perceiving the opponent's strength while enhancing one's own capacity for internal and external unity. Throughout the push hands exercise, practitioners engage through tactile contact, discerning shifts in the opponent's center of gravity and the trajectory of their force; this nuanced perceptive ability lies at the heart of Taijiquan's concept of "listening energy." The essence of push hands resides not in direct confrontation with the opponent's strength but in skillfully redirecting and neutralizing their offensive through techniques such as yielding, borrowing strength, and harmonizing with momentum, thereby seeking opportunities for counterattacks. This training

effectively cultivates both the strength and stability of the core area. Within the interactive nature of push hands, the control exerted by the waist and abdomen plays an indispensable role; every exertion and resolution of force hinges upon the support provided by the core. Push hands demands that practitioners maintain balance and coordination amid ever-changing postures, testing not only the stability of the lower limbs but also heavily relying on the power modulation of the waist and abdomen. A robust core empowers practitioners to remain stable in the face of external force, mitigating attacks while simultaneously identifying points of leverage for counteroffensive maneuvers [2]. Moreover, push hands represents not merely a physical training modality but a harmonious amalgamation of mind and body. It emphasizes the principle of "using stillness to overcome motion, and employing softness to conquer hardness," allowing strength to be seamlessly transformed through gentle responses. In this practice, the practitioner's focus is anchored in the core, with intention flowing through the limbs, rendering the body a cohesive, synchronized whole. Each touch and neutralization during push hands encapsulates the yin-yang transitions and the interplay of emptiness and substance inherent in Taijiquan.

3.3. Equipment training

The varieties of Taijiquan weapons are numerous, including the Taijiquan sword, Taijiquan saber, and Taijiquan staff, each demanding a certain level of strength, coordination, and stability from the practitioner. The weight and form of each weapon dictate the challenges posed to different parts of the body during training, particularly the core region, which plays a crucial role in balance, power generation, and control. Unlike unarmed training, weapon training extends the practitioner's movements to the manipulation of external objects, thereby increasing the demand for core strength. When wielding the Taijiquan sword or saber, the power from the abdomen and waist must not only maintain one's stability but also be transmitted through the core to the weapon, ensuring the coherence of movements and precision of force. Each strike or cut is not merely an action of the arms but a manifestation of core coordination that integrates the body's strength and harmony, culminating in the explosive force and control of the technique. The principle in weapon training emphasizes "leading the qi with intent, and directing force with qi." Mastery of the weapon relies on the coordination of core strength and internal energy, with longer weapons, such as the Taijiquan staff, demanding even greater bodily integration. During staff practice, the practitioner must harness core power to drive the entire body's movement, closely linking the staff's swings with body posture changes. The stability of the core is particularly vital, as it dictates the fluidity of movements and the effectiveness of force output, preventing rigidity or loss of control due to an unstable center of gravity. Weapon training not only enhances the practitioner's external strength and control but also fortifies internal breath regulation and mental focus. The core, as the nexus of power, undertakes a more intricate coordination task in weapon training. Prolonged practice with weapons not only strengthens the core but also improves overall body coordination and flexibility, achieving a harmonious balance of internal and external refinement.

3.4. Boxing Training

Each movement in Taijiquan emphasizes "soft sinking," signifying that during practice, the strength of the core serves to stabilize and support, rather than merely engaging the superficial muscles. The points of force in Taijiquan often arise from the rotation of the waist and abdomen. The core, through the coordination of the body, channels energy from the ground to the limbs, creating a unified release of power throughout the body. The essence of Taijiquan training lies in "leading with intent and directing energy," where the core's power, guided by intention, permeates each movement. Practitioners must ensure that every punch and form embodies an internal flow of strength rather than mere physical motion. The core not only generates force but also controls its rhythm and cadence, rendering the seemingly gentle movements of Taijiquan as vessels of hidden power. The "release of power" emphasized in Taijiquan is achieved through the accumulation and sudden explosion of core strength, transforming what appears to be slow movements into swift, potent force. Taijiquan training not only enhances core stability but also cultivates precise control over force. In practical Taijiquan techniques, the transition between tension and relaxation, as well as the interplay of solidity and emptiness, are crucial for success, all dependent on the core's strength and flexibility. Practitioners gradually learn to harness the rotation of the waist and abdomen to propel the strength of the limbs, maintaining overall body integrity and balance during combat. The robustness of the core improves the body's resilience and allows for more agile and varied power output [3].

4. Implementation measures of traditional core area strength training methods

4.1. Training program design

When designing a training regimen, we must first clarify the objectives, namely to enhance the practitioner's stability, coordination, and force generation through core strength exercises. These objectives should be tailored to the individual's unique characteristics, taking into account factors such as physical fitness, training experience, and technical proficiency, to ensure the regimen's scientific validity and personalization. The design of traditional core strength training should encompass multiple levels. Fundamental exercises like static stances and breath control aim to fortify core stability and improve breath regulation and control. Static stances emphasize the core's supportive role, keeping the body relaxed and grounded, while breath control helps practitioners further experience the core's power transmission through the flow of internal energy. These foundational exercises not only lay a solid groundwork for subsequent dynamic strength training but also foster a sense of unity between body and mind. In designing dynamic training, it is advantageous to incorporate basic Taijiquan movements, such as Cloud Hands and Grasp the Sparrow's Tail. Repeated practice of these movements not only enhances the control of core strength but also improves body coordination and flexibility through the seamless flow of motions. Dynamic training requires maintaining continuity and stability of core strength across varying postures, effectively simulating real-life applications of Taijiquan techniques and thereby enhancing practical combat skills. To ensure comprehensive training, the program should integrate Push Hands and equipment training. Push Hands, with its confrontational nature, demands constant adjustment of core strength, teaching practitioners to maintain balance and stability under external forces. Equipment training, utilizing varying weights and forms of apparatus, further enhances the core's strength endurance and force generation capabilities. These training components can be seamlessly combined to promote the holistic development of core strength. An effective training plan must also consider the cyclic and progressive nature of training. The design process should segment the training into different stages, gradually increasing intensity and difficulty to ensure the continuous accumulation of strength. A long-term, systematic training approach helps practitioners progressively master the application of core strength, achieving a harmonious balance of internal and external development.

4.2. Enrichment of training content

The power of the core area is not solely manifested in static support and balance but also encompasses force transmission and explosiveness in dynamic changes. To enhance the diversity of training content, it is imperative to break away from a singular training model, integrating static and dynamic exercises with internal and external methods to comprehensively elevate both the physical fitness and technical proficiency of practitioners. In static training, standing postures are a crucial component of core strength development in Taijiquan. Standing postures not only cultivate strength but also deeply regulate the body's center of gravity, sense of balance, and breath flow. Various stances, such as San Ti Shi, Gong Bu Shi, and Ma Bu Shi, stimulate different parts of the core while enhancing practitioners' awareness of their body's center. Through prolonged static training, the stability of the core area is reinforced, laying a solid foundation for subsequent dynamic training. Dynamic training, in contrast, is richer and more challenging, with emphasis on the stability and transmission of core power in movement [4]. Fundamental Taijiquan movements such as Lan Chuan Qi and Dan Bian are central to dynamic training, as their blend of softness and strength improves the flexibility of the core while training the concentration and release of force. Additionally, incorporating equipment training, such as Taijiquan sword and Taijiquan saber, increases the load through varying weights and forms of the implements, further enhancing the core's control during complex movements. Equipment training not only develops external muscle strength but also demands precise regulation of the core in motion, achieving a state of unity between internal and external forces. Push Hands training combines dynamic and combative elements, enriching training content while focusing on practical application. The stability of the core and timely adjustment of force in Push Hands directly impact the success of techniques. The application of force in combat relies not only on the hands and limbs but also on the transmission and balance control of the core. Push Hands training not only strengthens the use of core power but also cultivates the practitioner's adaptability to complex situations through interaction with external forces. The richness of training content is also reflected in the variety of methods used. Different forms of exercise, types of equipment, and modes of combat present unique challenges and stimuli to the core.

4.3. Innovation of training methods

Although traditional training methods emphasize the integration of internal and external development, a singular approach can no longer fully meet the comprehensive demands of practitioners for physical conditioning, techniques, and combat skills in the modern context. Therefore, innovating training methods while preserving the essence of tradition can more effectively enhance the effectiveness of core strength training. By integrating modern sports science, innovative Taiji core strength training can incorporate functional training concepts. For example, the use of resistance bands and balance balls can enhance multidimensional training of core strength. Resistance band exercises, simulating the force generation process in Taiji, can increase the load and allow practitioners to better experience the transmission of core power. Balance balls can strengthen practitioners' core stability, providing a dynamic balance training that closely mirrors the demands of real-world combat scenarios. This innovative training approach not only enriches traditional training content but also improves the adaptability of core strength in dynamic situations. Moreover, integrating modern technological tools represents a crucial direction for innovation. Today, virtual reality (VR) technology and wearable devices can offer more precise data support and feedback for Taiji core strength training. For instance, wearable devices can monitor core muscle activity and force generation in real-time, assisting practitioners in adjusting their postures and optimizing force efficiency. VR technology can simulate combat scenarios, allowing practitioners to experience realistic push-hands confrontations in a virtual environment, thereby enhancing core strength's flexibility and application in actual combat. In collective training, core strength control and application must continuously adapt to external changes, making team interaction not only a means of reinforcing core strength adaptability but also adding variety and enjoyment to the training [5].

5. Conclusion

The core strength training in Taijiquan is not merely an enhancement of physical fitness but also a manifestation of the intrinsic essence of Taijiquan culture and technique. Through traditional training methods such as stance training and push hands, practitioners deeply experience the transmission and control of power from within to the outside. This approach not only improves the body's balance and coordination but also deepens one's understanding of internal strength. The traditional strength training methods demonstrate their unique effectiveness and applicability in developing core strength, but integrating modern scientific exercise methods and concepts with these traditions can further enhance training outcomes. In-depth research into Taijiquan's core strength training methods not only provides practitioners with concrete training guidance but also offers contemporary support for the ancient cultural heritage of Taijiquan. The strength training methods of Taijiquan can play a more significant role in modern fitness systems, evolving into a new, scientific form of exercise. This fusion of tradition and modernity injects new vitality into the global promotion of Taijiquan.

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