

基于《陈氏太极拳图说》探究传统陈氏太极拳训练中膝关节疼痛成因

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摘要: **研究目的:** 探究传统陈氏太极拳学习与训练中膝关节疼痛成因进行深入研究具有重要的意义和价值, 并且对太极拳的发展有着深远的影响。根据现有研究结果表明, 在传统陈氏太极拳套路学习及训练过程中发生膝关节疼痛或损伤的现象普遍存在。虽然太极拳作为我国传统武术的杰出代表之一, 融汇贯通中华民族的文化精粹, 有大量数据与研究分析, 表明太极拳对人体具有诸多益处, 但是不可否认的事实是在练习和学习陈氏太极拳的过程中可能会造成膝关节疼痛或损伤。通过阅读文献可以发现, 各个研究从力学、医学等方面进行了分析并对膝关节疼痛提出了一定建议和解决方案, 但并未从拳理拳法中找到具体原因, 因此我们试图基于《陈氏太极拳图说》找到膝关节疼痛成因, 并提出建议和解决方案。**研究方法:** 本文将以中华民国时期陈氏太极拳第八代传人陈鑫所著刊本《陈氏太极拳图说》为主要依托, 采用文献法对陈氏太极拳的相关书籍、文献、史料进行研究。有针对性的收集知网中的文献资料, 并对在太极拳习练过程中膝盖疼痛人群信息进行收集, 为后续研究奠定可信度较高的数据参考基础, 同时运用逻辑法分析法对收集的数据进行总结归纳, 并通过自身实践经验与教学过程, 深入了解太极拳训练中出现膝关节疼痛的具体情况, 进而积极探索和研究潜在的因素, 验证和丰富对膝关节疼痛形成的认知。这种详尽的了解, 将为避免膝关节疼痛制定个性化的教学方案与策略提供更具体和有效的指导, 促进太极拳训练的健康、安全和效果的提升。**研究结果:** 通过对收集文献资料、数据进行汇总。在相关数据中可以发现在传统陈氏太极拳训练过程中造成膝盖疼痛的概率较高, 有文献显示在习练过程中出现膝关节疼痛 175 人占 49.30%, 且双腿膝关节在前侧、内侧、外侧都会有不同位置, 不同程度的疼痛出现, 并以钝痛为主。然而, 过往的研究表明, 太极拳的训练可以增加运动能力, 改善膝关节运动功能, 并对膝骨关节炎有一定的治疗作用。因此可以推断膝关节疼痛的出现, 可能是由于在训练中技术动作不规范导致的运动伤病, 本文尝试结合《陈氏太极拳图说》对训练过程进行分析。由于陈氏太极拳中强调整体, 正如拳经中“一动无有不动, 一静则百骸无有不静”, 周身剩下协调一致, 因此, 在太极拳训练中动作出现细微的误差都可能导致动作整体出现问题, 影响膝盖变化路线和稳定性。太极拳的技术动作不同于其他运动, 动作千变万化但万变不离

其中，每一招一式的运动核心、动力链要求一致，一通百通。运动过程中静为阴，动为阳，因此可以在一动一静中分别寻找导致膝关节疼痛的成因。静，通常在太极拳的基本功中或每一招的定式出现，在太极拳的定式中通常严格要求：虚领顶劲（释：头顶百会穴向上，下颏微微向回收起，双眼目视前方），虚领顶劲可以使肩部放松，上身直立，以防治驼背、头前引等不良体态的出现，为含胸拔背提供帮助。松腰落胯（释：腰胯同时放松，盆骨向前微微卷动在太极拳中称为敛臀，但同时腹股沟不得出现向外顶的力量，左右两胯处于一条水平线，在拳谱中称之为“合劲”，尾椎在此时方向向下坠），这时腰背会自然达到直立状态。当虚领顶劲合松腰落胯符合技术标准，这个状态在太极拳中便称为立身中正，身体不偏不倚，重心垂直向下。圆裆屈膝（松腰落胯的同时，将两胯撑开，膝随胯放松微屈并向内微微扣起使膝前与脚尖对齐）。在实际运动中，可以观察到如果这几个要求中有一个没有得到正确执行，那么其他要求也很可能会出现。如虚领顶劲不符合标准，人整体可能就会出现驼背趴腰，整体重心前倾，大多数训练成员的反馈为膝盖前侧疼痛，于此同时也发现在仅松腰不落胯的错误运动动作出现时，训练者会出现身体略向后倾斜，双膝向前明显超过脚尖，也会出现膝盖前侧疼痛现象。反馈符合文献数据当中描述的钝痛。动，是指在运动过程中出现的一切身体活动变化。它包括人体各部位的动作、姿势、位置的转移以及形态和状态的改变。在太极拳训练中，动可以指具体的动作执行。从拳理来说，太极拳的动则是阴阳转换，虚实变化。在变化中求不变则是对运动过程的要求，变化的是身体形态，但不变的是对动作执行的要求。从实践中来看，在变化中保持动作的正确性更加困难，不仅是对身体控制力的考验，也是对身体承受负荷的考验。拳论中讲“其根在脚，发于腿”、“节节贯穿”、“有不得机不得势之处，身便散乱，其病当由腰腿求之”，说明运动中的误差，多数与腿有关，这意味着这些要求之间存在相互关联和相互依赖的关系。因此，在太极拳的实践过程中，确保每个要求都得到正确履行非常重要，以确保整个动作的流畅性和有效性。任何一个环节的疏忽或偏离都可能对整体产生不良影响，导致膝关节损伤的发生。在太极拳训练中“动”的基础是缠丝功，结合“其根在脚，发于腿”，说明力由地起腿部发力进行蹬转从而进行虚实变换以进行下一步动作，而在蹬转过程中，结合上文太极拳对定势的要求，需要膝盖内扣对准脚尖，但练习者往往在运动时忽略此注意事项，容易在运动中出现膝关节向内或向外摆动，使膝关节不稳定，摆动的同时蹬地转移就会对膝关节形成旋转的压力。在传统陈氏太极拳中，往往腿部肌肉负荷较大，且膝关节主要的功能在于屈伸，就可能导致膝关节受力不均压力过大产生疼痛甚至受伤的现象，而运动中产生的膝关节疼痛往往出现在膝关节两侧。**结论：**大多数传统陈氏太极拳练习者的膝关节疼痛，往往是因为技术动作不规范或在训练过程中只注重某一方面，顾此失

彼，但太极拳是一种“一动无有不动”的运动体系。陈氏太极拳自训练伊始便自成体系，训练是由僵劲到松柔的转变过程。在这个过程中不仅仅需要学习动作规范同样应该明白拳理以纠正自身误差，这也说明了传统武术中“口传心授”的特征。在现代社会发展中随着网络的不断发展，很多人跟随网络视频进行自学，但是对自身动作无法进行正误的判断，或许他们可以采取使用人体二维测量图对照拳谱拳理进行改正。而从整个陈氏太极拳训练过程来看，训练过程中所导致的膝盖疼痛，都可以对应《陈氏太极拳图说》找到自身动作误差，因此对《陈氏太极拳图说》学习和研究对解决在太极拳习练过程中的膝盖疼痛有着重要意义。

关键词：陈氏太极拳；膝关节疼痛；训练误差；拳理研究

Based on "Chen-style Taijiquan Illustration" to explore the causes of knee pain in traditional Chen-style Taijiquan training

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Abstract: Research purposes: It has great significance and value to conduct in-depth research on the causes of knee pain in the learning and training of traditional Chen-style Taijiquan, and it has a profound impact on the development of Taijiquan. According to existing research results, knee pain or injury is common during the learning and training of traditional Chen-style Taijiquan routines. Although Taijiquan, as one of the outstanding representatives of Chinese traditional martial arts, integrates the cultural essence of the Chinese nation, and there are a large amount of data and research analysis showing that Taijiquan has many benefits for the human body, however, it is undeniable fact that practicing and learning Chen-style Taijiquan may occur knee pain or injury. By reading the literature, it can be found that various studies analyzing the aspects of mechanics and medicine put forward certain suggestions and solutions for knee joint pain and injury, but they did not find specific reasons from Taijiquan Principles and Tai Chi Boxing Methods. Therefore, we try to base on "Chen-style Taijiquan Illustration" to find out the causes of knee pain and provide suggestions and solutions. **Research methods:** This article will mainly rely on the publication "Chen-Style Taijiquan Illustration" written by Chen Xin, the eighth-generation successor of Chen-Style Taijiquan in the Republic of China, and use the literature method to conduct research on related books, documents, and historical materials of Chen-Style Taijiquan.

Targeting collection of literature in HowNet, collecting information on people with knee pain during Taijiquan practice, laying a reliable data reference foundation for subsequent research, and using logical analysis to analyze and summarize the information behind the data. In addition, We through our own teaching and practical experience, in-depth understanding of the specific situation of knee pain in Tai Chi training, and then actively explore and study potential factors, verify and enrich the cognition of knee pain formation. We believe that the detailed understanding will provide more specific and effective guidance for developing personalized teaching programs and strategies and provide help for avoiding knee pain promoting the health, safety, and effectiveness of Tai Chi training. **Research results:** through the collection of literature and data summary. In the relevant data, it can be found that the probability of knee pain during traditional Chen-style Taijiquan training is relatively high. Some literature shows that 175 people experience knee joint pain during the practice of Taijiquan, accounting for 49.30%, and the knee joints of both legs position no matter in the front, inside, and outside have different degrees of pain appear mainly dull pain. However, previous studies show that Tai Chi training can increase exercise capacity, improve knee motor function, and have a certain therapeutic effect on knee osteoarthritis. Therefore, it can be inferred that the occurrence of knee joint pain may be due to sports injuries caused by irregular technical movements during training. This article tries to analyze the training process in conjunction with "Chen-Style Taijiquan Illustrations". Because Chen-style Taijiquan emphasizes the whole body, just as in the boxing scriptures ", and when staying still everything stays still" the whole body remains in harmony. Therefore, slight errors in movements during Taijiquan training can cause problems with the movement as a whole, affecting the line of motion and stability of the knee. The technical movements of Taijiquan are different from other sports. The movements are ever-changing but inseparable from it. The core and power chain requirements of each move and style are the same when you understand and find every movement. During exercise, stillness is yin, and movement is yang. Therefore, the causes of knee joint pain can be found separately in each movement and stillness. stillness usually appears in the basic skills of Taijiquan or in the fixed form of each move. In the fixed form of Taijiquan, it is usually strictly required: Xuling Dingjin (the Baihui point on the top of the head is upward, the lower jaw is slightly retracted, and the eyes look forward.), Xuling Dingjin can make the shoulders relax and the upper body stand upright, so as to prevent the occurrence of bad postures such as hunchback

and head forward. Loosening the waist and dropping the hips(The waist and hips are relaxing at the same time, and the pelvis is slightly rolling forward. In Taijiquan, it is called tightening the buttocks, but at the same time, the groin must not have the force to push outward, the caudal vertebrae downwards at this time.)and the back will naturally reach an upright state at this time. When the combination of Xuling ding jin and loose waist and hips meet the technical standards, this state is called standing upright in Taijiquan, with the body unbiased and the center of gravity vertically downward. Rounding crotch and bent knees (while loosening the waist and dropping the hips, hold the two hips open, the knees relax with the hips and bend slightly and buckle inward slightly so that the front of the knees are aligned with the toes). In actual movement, it can be observed that if one of these requirements is not implemented correctly, then the others are likely to be problematic as well. such as Xuling ding jin does not meet the standard, the person as a whole may appear hunchback lying on the waist, the overall center of gravity forward, most of the training members of the feedback for the anterior side of the knee pain, at the same time it is also found that in the only loosening of the waist does not drop the hips of the erroneous movement appeared, the trainer will appear to be the body slightly tilted backward, the knees are forward significantly more than the toes, but also appear the anterior side of the knee pain phenomenon, in line with the data describing in the literature of the dull pain. Movement is defined as all changes in physical activity that occur during movement. It includes movements, postures, shifts in position, and changes in form and condition of all parts of the body. In Taijiquan training, movement can refer to the execution of specific actions. In terms of boxing theory, the movement of Taijiquan is the transformation of yin and yang, and the change of reality and emptiness. Seeking constancy from change is the requirement for the process of movement; what changes is the physical form, but what remains unchanging is the requirement for the execution of the movement. In practice, it is more difficult to maintain the correctness of the movement in the change, which is not only a test of the body control but also a test of the body's loading bearing. Boxing theory says that "its root is in the feet, starting in legs", "section through", and " if there something is wrong, the body will be scattered, the disease should be sought by the waist and legs", indicating that the errors in the movement, most of them are related to the legs, which means that there is an interconnection and interdependence between these requirements. Most of them are related to the legs, which means that there is an interrelated and interdependent

relationship between these requirements. therefore, It is important to ensure that each requirement is correct during the practice of taijiquan to ensure the fluidity and effectiveness of the movement as a whole. Negligence or deviation in any one part of the process may have an adverse effect on the whole and lead to the occurrence of knee injuries. In the training of Taijiquan, the foundation of "movement" is the winding work, combined with "its root is in the foot, starting in legs", which means that the force is generated by the ground from the leg to stomp and turn so as to carry out the change of the real and virtual in order to carry out the next action, and in the process of stomping and turning, combined with the requirements of the above taijiquan on the fixed position, it is necessary to buckle the knee to the toe. In the process of stomping and transferring, the practitioners often ignore this precaution in the movement, and it is easy for the knee to swing inwardly or outwardly during the movement, making the knee unstable, and the stomps transferring at the same time as the swinging will form a rotational pressure on the knee joints. In traditional Chen-style Taijiquan, often the leg muscle load is larger, but the main function of the knee joint lies in the flexion and extension, which may lead to uneven stress on the knee joint pressure is too large to produce pain or even injury, and the knee pain producing in the movement often occurs on both sides of the knee joint. **Conclusion:** Most of the traditional Chen's taijiquan practitioners have knee pain, often because the technical movement is not standardized or the training process only focuses on a certain aspect, loss of sight of the other, but taijiquan is a kind of "When moving everything moves" of the movement system. 4 Conclusion: Most of the traditional Chen's taijiquan practitioners have knee pain, often because the technical movement is not standardized or the training process only focuses on a certain aspect, loss of sight of the other, but taijiquan is a kind of "a movement has no immobility" of the movement system. Chen-style Taijiquan has self-containing system since the beginning of its training, and the training is a process of transformation from rigidity to flexibility. In this process, not only do we need to learn the standardization of movements, but we should also understand the theory of boxing in order to correct our own errors, which also explains the characteristic of "oral teaching" in traditional martial arts. In the development of modern society with the continuous development of the network, many people follow the network video for self-study, but they can not judge their own movements right or wrong by themselves, nowadays perhaps they can take the use of the human body two-dimensional measurement chart against the boxing spectrum boxing theory for

correction. From the viewpoint of the whole Chen's Taijiquan training process, the knee pain and injury caused by the training process can be found in the "Chen-style Taijiquan Illustrations" with the corresponding movement error, so the study and research of the "Chen-style Taijiquan Illustrations" are of great significance in solving the knee pain in the process of Taijiquan practice.

Key words: Chen-style Taijiquan; knee pain; training error; boxing theory research