

太极拳在全球临床干预研究中的知识图谱分析

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摘要: **目的:** 厘清太极拳临床干预研究的研究现状、前沿热点及发展趋势, 推进实现太极拳临床干预研究的科学化、标准化、健康化发展。通过绘制知识图谱与多元数据分析对国际太极拳临床干预研究动态进行定性定量分析, 呈现国际太极拳临床干预研究领域信息全景, 以期对未来研究提供参考。 **方法:** 以主流中英文数据库中纳入最长达 75 年的太极拳临床干预研究作为研究对象, 运用普赖斯的科学文献逻辑增长曲线理论通过双轴堆积蝴蝶图对比中英文数据库纳入的文献进行时空演进分析, 运用多种文献计量可视化软件结合前沿分析手段进行科学知识图谱绘制, 图谱解读从宏观到微观, 从直观到复杂, 从整体到局部, 层层剖析深入研究, 直观呈现太极拳临床干预研究领域信息全景, 系统梳理该领域的研究现状、前沿热点及研究趋势。 **结果:** 研究现状中, CNKI 中文数据库中的太极拳研究是 WOS 英文数据库中的 4 倍, 但太极拳临床干预研究领域后者是前者的 3 倍, 其高质量研究为 6 倍。说明对于太极拳的健康化、科学化研究方面, CNKI 中文数据库及中文研究还有进一步成长的空间。可能进入范式积累的瓶颈, 需要理论革新或技术进步来摆脱科学危机。按照普赖斯逻辑增长曲线, WOS 英文数据库中太极拳临床干预研究增长趋势正接近常规科学阶段指数增长的尾声, 我们要积极用理论指导实践, 完成范式累积, 还要未雨绸缪, 为未来可能面临的科学危机提前做好准备, 努力探索新范式推动范式变革, 打破瓶颈推进科学革命, 引领新常规科学。美国作为较早涉猎太极拳临床干预研究的国家之一, 其发文量与中国在伯仲之间, 但其引用量是中国的两倍, 可能与其科研水平总体发达和其科研理论的高创新性有关。太极拳在亚洲文化圈具备更富饶的传播土壤, 除文化领域的深入研究, 对于太极拳临床干预的健康应用研究方面还有进一步的探索空间。太极拳临床干预研究所涉及的基础研究领域较为复杂, 医学、神经学、心理学等组成了研究重心引领前沿, 康复学、护理学、生物学等构建了研究基础。随着当前学科交叉性研究不断广泛深入, 太极拳临床干预研究领域学科类群覆盖面将愈加广泛。研究热点中太极拳临床干预研究所涉及的基础研究领域较为复杂, 医学、神经学、心理学等组成了研究重心引领前沿, 康复学、护理学、生物学等构建了研究基础。突现主题分为三阶段, 研究重心分别从运动系统到神经系统至多元综合系统; 太极拳可分为对抗、锻炼和

治疗的不同模式，当前的临床干预套路选用中简化 24 式太极拳作为一种低强度有氧运动锻炼模式被应用的最多。结论：通过可视化分析可见国际太极拳临床干预研究呈指数化上升且高质量研究稳步增加，但是还存在一些问题，对于太极拳的健康化、科学化研究方面，CNKI 中文数据库及中文研究还有进一步成长的空间。中文研究可能进入范式积累的瓶颈，需要理论革新或技术进步来摆脱科学危机。我们要积极用理论指导实践，完成范式累积，还要未雨绸缪，为未来可能面临的科学危机提前做好准备，努力探索新范式推动范式变革，打破瓶颈推进科学革命，引领新常态科学。太极拳在亚洲文化圈具备更富饶的传播土壤，除文化领域的深入研究，对于太极拳临床干预的健康应用研究方面还有进一步的探索空间。随着当前学科交叉性研究不断广泛深入，太极拳临床干预研究领域学科类群覆盖面将愈加广泛。根据突发强度预测，未来一段时间内对于癌症主题的研究热度可能会出现增长波动，糖尿病、高血压等主题研究热度持续可能不会出现较大波动，未来研究热点可能会集中在神经系统领域，例如焦虑、睡眠等研究方向；若旨在治疗，应该加强实用性与创新性构建具体化、标准化、差异化的太极拳治疗模式，针对性的开发其在临床干预上的潜力。另外，应加强学科交融、国际合作与资金支持，提高太极拳临床干预研究的质量，获取更多长周期、大样本量、高针对性的临床实证。

关键词：太极拳；健康促进；临床干预；可视化；知识图谱

Knowledge Graph Analysis of Tai Chi in Global Clinical Intervention Research

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Abstract: Objective: This study aims to elucidate the current state of research, identify leading areas of interest, and forecast the evolving trends in Taijiquan clinical intervention research. Additionally, it seeks to advance the scientific, standardized, and health-oriented development of Taijiquan clinical intervention research. By employing knowledge mapping and multivariate data analysis techniques, this research offers both qualitative and quantitative insights into the dynamic landscape of international Taijiquan clinical intervention research. The results provide a comprehensive overview of the field and serve as a valuable reference for future studies. **Methods:**

This study focused on clinical intervention research related to Taijiquan, spanning up to 75 years, using mainstream Chinese and English databases as its primary data sources. The research methodology employed Price's scientific literature logical growth curve theory to facilitate a temporal and spatial evolution analysis of the literature retrieved from Chinese and English databases. Additionally, various bibliometric visualization software tools, in conjunction with state-of-the-art analytical methods, were utilized to construct scientific knowledge maps. These maps were subjected to interpretation, ranging from a macroscopic view to a microscopic one, from intuitive to intricate, and from comprehensive to selective. Through a layered approach, in-depth analysis was conducted to visually present a panoramic view of the clinical intervention research field of Taijiquan. This process systematically elucidated the research status, identified frontier hotspots, and forecasted research trends within the domain. **Results:** In the current research landscape, Taijiquan research within the CNKI Chinese database exceeds that within the WOS English database by a factor of four. However, in the realm of Taijiquan clinical intervention research, the WOS English database surpasses the CNKI Chinese database by a factor of three, with a sixfold higher representation of high-quality research. This suggests that there is still untapped potential for growth within the CNKI Chinese database and Chinese research related to the health and scientific aspects of Taijiquan. It is possible that Chinese research may encounter a bottleneck in paradigm accumulation, necessitating either theoretical innovation or technological advancement to overcome potential scientific challenges. According to Price's logical growth curve, Taijiquan clinical intervention research in the WOS English database is approaching the culmination of exponential growth associated with conventional scientific stages. To prepare for potential scientific challenges in the future, proactive utilization of theory to guide practice and the completion of paradigm accumulation is imperative. Striving to explore new paradigms to drive paradigm shifts, breaking bottlenecks to facilitate scientific revolutions, and leading new conventions in science are essential objectives. As one of the earliest countries engaged in clinical intervention research on Taijiquan, the United States publishes twice as many articles as China in this domain, with double the citation impact. This discrepancy may be attributed to the overall development of its scientific research landscape and the high level of innovation in its scientific research theories. Taijiquan benefits from a more fertile environment for dissemination within Asian cultural circles. In addition to cultural studies, there is untapped potential for further

exploration in the realm of health applications for clinical interventions involving Taijiquan. The fields of basic research encompassed within Taijiquan clinical intervention research are notably multifaceted, with medicine, neurology, psychology, and other disciplines forming the core research focus, leading the frontier. Rehabilitation, nursing, biology, and related fields provide the foundational support for these investigations. Given the ongoing expansion and deepening of interdisciplinary research, the coverage of discipline groups within the realm of Taijiquan clinical intervention research is poised to become even more extensive. Regarding research hotspots, the basic research fields within the domain of Taijiquan clinical intervention research are indeed intricate, with medicine, neurology, and psychology driving the forefront of research interest, while rehabilitation, nursing, biology, and related disciplines underpin the foundational research. Emerging themes can be categorized into three distinct stages, each highlighting research progression from the motor system to the nervous system and ultimately to the complex multi-system approach. Taijiquan itself can be classified into various modes, including confrontation, exercise, and treatment, with the simplified 24-style Taijiquan emerging as the most commonly utilized low-intensity aerobic exercise mode in current clinical intervention routines.

Conclusion: Visual analysis reveals that international clinical intervention research on Taijiquan has experienced exponential growth, with a concurrent increase in high-quality research. Nevertheless, several challenges persist, and there remains untapped potential within the CNKI Chinese database and Chinese research related to the health and scientific aspects of Taijiquan. It is possible that Chinese research may encounter a bottleneck in paradigm accumulation, necessitating either theoretical innovation or technological advancement to overcome potential scientific challenges. Proactive utilization of theory to guide practice, the completion of paradigm accumulation, and readiness for potential scientific crises are essential. Striving to explore new paradigms to drive paradigm shifts, breaking bottlenecks to facilitate scientific revolutions, and leading new conventions in science are critical objectives. Taijiquan is culturally rooted in Asian circles, offering ample opportunities for dissemination. Beyond cultural studies, there is untapped potential for further exploration in the realm of health applications for clinical interventions involving Taijiquan. With ongoing extensive and deepening interdisciplinary research, the coverage of discipline groups within the Taijiquan clinical intervention research field is poised to expand further. Predictive burst intensity analysis suggests that research enthusiasm on

cancer-related topics may fluctuate in the future, while the popularity of research on subjects like diabetes and hypertension may remain relatively stable. Future research hotspots are expected to focus on the nervous system, including areas such as anxiety and sleep. If aimed at treatment, it is imperative to enhance practicality and innovation by developing concrete, standardized, and differentiated Tai Chi treatment models, harnessing its potential for clinical intervention. Furthermore, efforts should be directed towards strengthening interdisciplinary integration, fostering international collaboration, and securing financial support. These measures will aid in enhancing the quality of clinical intervention research on Taijiquan and obtaining more long-term, large-sample-sized, and highly targeted clinical evidence.

Key words: Tai Chi Chuan, health promotion, clinical intervention, Visualization, knowledge graph