AI Empowers Music Therapy in China

-- Educational Breakthroughs and Clinical Transformation

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Abstract. Music therapy is a discipline that integrates multiple fields such as music, medicine and psychology, and it is of great significance for improving people's physical fitness and mental health. This project employs the method of literature review to systematically sort out the major achievements of domestic music therapy research since the 21st century, and studies its research background, development context and current characteristics, especially focusing on issues such as its application practice, the construction of the discipline education system and the standardization of clinical operations. In view of the problems existing in the current research of music therapy, such as the imperfection of the theoretical framework, the non-uniformity of practical standards, and the imperfection of talent cultivation, based on the development trend of this field, the future research directions and practical approaches are discussed, with the expectation of having important reference significance for the standardized development and localization promotion of music therapy.

Keywords: Music Therapy; Artificial Intelligence; Traditional Music; Interdisciplinary Integration.

1. Introduction

Currently, there is no universally accepted definition of music therapy, and interpretations vary. Originating in the United States during the 1950s, this interdisciplinary field transcends traditional boundaries of music art and aesthetics, focusing on utilizing and broadening music's role in healthcare. Professor Zhang Hongyi said that music therapy is mainly based on psychology. It uses the unique influence of music on the body and mind to design personalized musical activities for people under the guidance of therapists. This experience can help people overcome psychological troubles and make their hearts stronger.

2. Research Background

2.1 Disciplinary Foundations and Societal Drivers

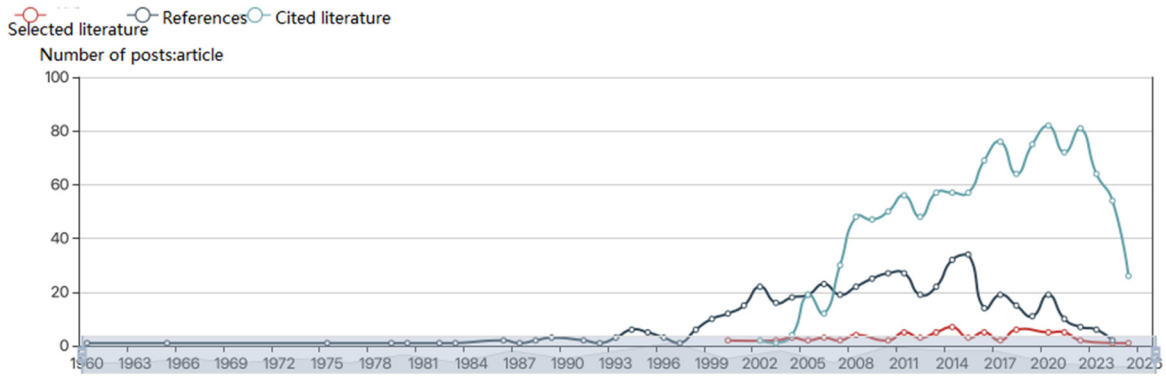


Figure 1. A Steady rise in publications on music therapy

The concept of "music therapy" entered China in the 1980s. It was not until the beginning of the 21st century that its theory was slowly perfected. Zhang Hongyi's research in 2000 deeply explored its development process and core principles, laying the foundation for the whole field. In 2004, Zhang Mingyan's research detailed the whole process from its inception to growth in China, which marks that the current research no longer focuses on a single technology, but begins to move towards diversity and interdisciplinary.

Since 2000, there has been a steady rise in publications on music therapy, with a notable surge from 2017 to 2023, during which over 60 papers were published annually, signaling a burgeoning phase with a focus on clinical application. The growing societal emphasis on mental health, advancements in rehabilitation medicine, and the aging population have collectively propelled music therapy from theoretical inquiry to practical clinical investigation. Presently, bolstered by ongoing progress in rehabilitation medicine and governmental backing, findings from clinical studies are paving the way for music therapy to progress steadily towards standardized clinical implementation.

2.2 Opportunities for Interdisciplinary Development

Since the onset of the 21st century, the advancement of music therapy has garnered the interest of various scientists. This interdisciplinary collaboration has facilitated progress across multiple domains, including mood regulation research, the application of information technology, and the integration of traditional medical concepts. The insights from these diverse fields have collectively contributed to the theoretical framework and methodology of music therapy.

3. Research Status

3.1 Foundational Disciplinary Research

In the 21st century, most of the research on music therapy in China starts from history. The development path shows a clear evolutionary direction from tracing the origin of tradition to building a modern system. In terms of traditional research, Lin Huifen (2006) traced its origin through literature verification. Zhang Yong and Zhang Hongyi (2014) systematically reviewed the practices of music therapy throughout history, with a focus on elaborating the special value of the "five-tone Therapy" in traditional Chinese medicine treatment. "This approach is grounded in the Five Elements theory of traditional Chinese medicine, which encompasses the five elements described in the Inner Classic, the five tones associated with the five internal organs, and the corresponding five emotions. The treatment methodology involves "diagnosis and treatment," wherein patients listen to music from various ethnic modes to achieve the therapeutic objective of harmonizing the internal organs, meridians, and emotional states." [17]

The theoretical research on music therapy in China has two characteristics: "introduction" and "innovation". Early research was mainly introduced from abroad. Hao Li (2021) provided a relatively systematic explanation of the theoretical system of Western classical economics by analyzing the relevant theories of Rudolf Robbins. Wen Biqin (2016) explained the integration of traditional Chinese and Western medicine with the "Five-tone Therapy", while Liu Xiaotian and Zhang Hongyi (2008) proposed the concept of "inclusiveness and integration", emphasizing "fusion" and "integration". Among them, the metaverse theory proposed by Li Jingze and Ji Huibin (2022) provides a new research perspective for this field.

3.2 Clinical Application Research

Research on music therapy in the 21st century is centered on clinical practice and has formed an application system that caters to multiple scenarios and different groups of people. Huo Xiangnan (2010) believes that this method has a good application prospect in mental health intervention, physical rehabilitation and special education, etc. Fan Zihan (2014) studied the role of Orff music therapy in early childhood development.

According to the keyword analysis (Figure 2), the frequently occurring words are "treatment subjects", "children with autism" and "mental health", which are in line with the previous statement of "taking into account multiple groups and emphasizing mental health". Therefore, children with special needs, especially those with autism, have become the main treatment targets at present.

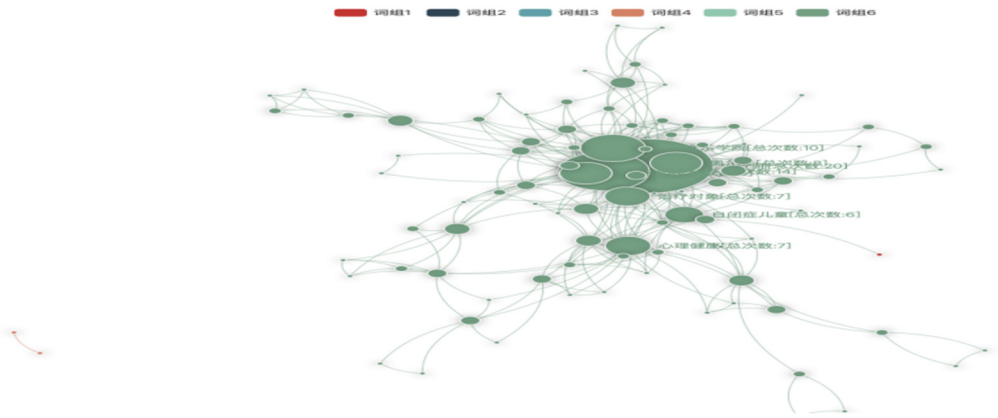


Figure 2. The keyword analysis

3.3 Education and Talent Development

During the development of the discipline, more and more people have paid attention to the cultivation of talents and gradually formed a research approach of "situation analysis - comparison between China and foreign countries - path optimization". Zhang Hongyi (2003) examined the teaching of music therapy in China over the past 20-plus years and believed that it had initially formed a basic structure. After 2017, Zhang Haitao (2017,2018) conducted a comparative analysis of the differences in curriculum design and actual training between China and the United States.Du Hongmei and Lu Na (2018) proposed the structural contradiction of "shortage of higher vocational colleges", and Song Boyuan and Lu Na (2016) analyzed the cognitive deviation of "higher vocational colleges and specialized schools", providing a theoretical basis for teaching reform.

4. Research Focus

4.1 Deepening Local Distinctiveness

Localization is an important topic in the research of music therapy in China in the 21st century, and its research content mainly focuses on two aspects: "ethnic music" and "theory of traditional Chinese medicine". In the study of folk music, scholars mostly focus on systematic construction: Gu Qiuhong (2009), Song Boyuan, Chen Xijing (2021), and others have proposed a research approach centered on traditional music. Wen Biqin (2016) and Fan Xinsheng (2024) explored that "Five-tone therapy" is a hot topic in the integrated research of traditional Chinese medicine at both theoretical and practical application levels. Liu Xiaotian and Zhang Hongyi (2008) made great efforts in supporting research methods and, on this basis, constructed a three-dimensional analysis framework of "theoretical interpretation - practical verification - system improvement".

4.2 Foundational System Development

With the promotion of music therapy in clinical practice, standardization has become an important guarantee for ensuring therapeutic effects and the credibility of the discipline. Shao Wenjun (2021) took the standardization of clinical services as the research object, proposed the concept of "standardized diagnosis and treatment", and put forward the corresponding system construction plan. Huo Xiangnan (2010) also pointed out in his clinical review that standardized interventional therapy is of great significance to the development of this field. From the perspective of disciplinary development, Wang Yipin (2015) and Liu Ying (2013) proposed that "standardization" is the prerequisite for the large-scale promotion of music therapy, which reflects the academic community's high attention to clinical quality control.

Issues related to talent remain at the core of this field, and research in this area has increased since 2017. The typical research led by Zhang Haitao (2017, 2018), drawing on the experience of universities such as New York University in the United States, conducted a relatively comprehensive comparison of the music therapy teaching systems in Chinese and American universities, and

proposed that China should further improve medical teaching and the construction of multi-disciplinary interdisciplinary courses on this basis. In an interview in 2018, Du Hongmei pointed out that the predicament of "many university graduates but few suitable jobs" has prompted the industry to rethink the degree of fit in the talent market. Song Boyuan and Lu Na (2016) hold that the "theoretical fallacies" in the "College English" textbook are an important factor affecting the development level of higher education in China.

4.3 Expanding the Dimensions of Innovation

In music therapy, the application of new technologies and the innovation of scenarios are currently important research areas in the field of music therapy. In terms of technological integration, Zhang Jing (2006) first proposed the concept of digital music therapy and explored the potential of technology in music intervention. Li Jingze and Ji Huibin (2022) also introduced metaverse technology and analyzed some innovative applications such as virtual environments and digital twins, advancing music therapy from "physical scenes" to "mixed reality", thereby providing technical impetus for the development of this field. In terms of scenario expansion, the research has transcended the traditional medical field and extended to a broader social context. For instance, the 2013 Beichuan Middle School project of Ziyin integrated music therapy with post-disaster psychological reconstruction and cultural heritage protection. The "Oriental Celestial Melody" plan (2010) focuses on stress relief for the general population, demonstrating a shift from clinical treatment scenarios to health promotion scenarios.

5. Research Limitations

5.1 Theoretical Framework Remains Underdeveloped

Although the theoretical exploration of localization is a hot topic, a complete framework has not yet been formed. However, most of the introductions in the West on this matter still remain at the level of explanation and fail to be deeply integrated into Chinese culture and clinical practice. Local research, such as "Five-tone Therapy", shows a fragmented feature, that is, it focuses on case analysis without scientific argumentation or systematic construction. Scholars such as Liu Xiaotian and Zhang Hongyi (2008) hold that it is necessary to establish a complete system of traditional Chinese medicine music therapy. Moreover, the integration among disciplines is insufficient, and there is a lack of a unified dialogue framework, which has led to a fragmented state of research.

5.2 Insufficient Standardisation of Clinical Practice

The scientificity and standardization of clinical music therapy urgently need to be improved. Shao Wenjun (2021) found that there were significant differences in musical materials, intervention time and evaluation indicators, which greatly affected the reproducibility and horizontal comparison of the experimental results. Previous studies mostly relied on empirical induction and lacked experimental verification, resulting in "a lack of high-quality evidence-based research and some research protocols being non-standard" [Wang Jingjing, Ke Li, 2025]. However, the follow-up period was too short, and the reliability of the research results also declined accordingly.

6. Implications for Future Research

6.1 Strengthening Interdisciplinary Integration

Future research requires innovation and interdisciplinary cooperation, and continuous improvement of the theoretical system. To this end, we should strengthen the construction of local theory and actively carry out specific research on methods such as "five-tone therapy" and "music electrotherapy". At the same time, we should combine physiology and neuroscience to deeply understand the mechanism of music therapy. Interdisciplinary exchanges should also be organized

regularly, experts from music, medicine, information technology and other fields should be invited to participate, and research plans should be jointly formulated to promote the deep integration of disciplines. Zheng R Fu Cong (2022) proposed that the government should support the combination of artificial intelligence and music therapy, establish relevant ethical norms, and integrate them into the health big data system.

6.2 Leveraging Local Advantages

The advancement of artificial intelligence has reached a new phase. While the exploration of "AI + music therapy" in China is in its early stages, the treatment approach of artificial intelligence aligns closely with traditional Chinese ideology. According to Zhang Hongyi, "the philosophical basis of music therapy in China stems from extensive practical experience, underpinned by the insights of traditional Chinese medicine. " [8] Ancient Chinese medicine gathered a wealth of health data through observation, listening, inquiry, and pulse examination, which inherently embodies early human intelligence. Dr. Maranto, the former president of the World Federation of Music Therapy (during his 1995 lecture in China), also emphasized that Eastern philosophy and medicine emphasize holism, making them highly compatible with the principles of music therapy. Therefore, by delving deeply into the principles and reservoir of resources concerning music therapy in traditional Chinese practices, there exists the potential to contribute a distinctive Chinese perspective to the fusion of "AI + music therapy."

6.3 Music Therapy Talent Development in Higher Education

At present, some music therapy courses in domestic universities are relatively Westernized, and English textbooks are also used. This is difficult for music students who are not very good at English. In terms of teachers, we need to implement the methods of "bringing in" and "going out". On the one hand, we can invite senior experts from abroad as visiting professors; on the other hand, we should also send our teachers to well-known overseas institutions for further study. This can help teachers master the latest teaching methods and clinical skills and avoid lagging behind in knowledge. Therefore, colleges and universities should combine their own interdisciplinary strengths to design a more suitable music therapy curriculum system in China. Based on this, institutions should design music therapy curricula by leveraging their interdisciplinary strengths.

7. Conclusion

At the onset of the 21st century, music therapy research in China transitioned from theoretical exposition to practical implementation, from Western influence to indigenous adaptation, marking a pivotal phase of advancement. Professor Li Xiaobing emphasized the historical significance of the convergence of art and science in propelling human civilization forward, highlighting each juncture as a critical milestone in history. For the discipline of music therapy in China to shift from "rapid development" to "high-quality development", it is necessary to promote both "localization" and "scientificity", as well as "standardization" and "precision" in parallel. Only in this way can this discipline move from rapid development to high-quality development and make due contributions to the strategy of building a healthy China and a cultural power.

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