



# Assessing the Impact of Music Therapy on Special Needs Education: A Case Study in Guangzhou, China

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## ARTICLE INFO

## ABSTRACT

This study examines the effectiveness of music therapy as an educational intervention for special needs students aged 9 to 11 in Guangzhou, China. Quantitative and qualitative case study research question: In what ways can the subject benefit from music therapy, including parameters related to speech development, social interaction, cognition, and self-regulation? The research employs comparative qualitative data (fabs) semi-structured interviews with teachers and experienced child therapists, as well as comparing pre and post-instructional cognitive and behavior shift surveys in a three-month intervention. Some identified effects include enhanced engagement, communication, interactive profiles, working memory, and processing speed. Regarding quantitative changes, numerical analyses revealed significant improvements in the Working Memory Index and the Processing Speed Index of the WISC-V, as well as in the area of communication of the Vineland-3. The behavioral check results conclude that hyperactivity and aggression are less prominent. Supporting quantitative evidence consists of positive descriptive data provided by the staff of educators and therapists, noting louder vocalization, peer interaction, and enhanced student self-regulation.

However, the study also points out the problems that may be faced in applying music therapy, such as scarcity of resources and cultural beliefs about disability and therapy. The fact that there are differences in the reactions of subjects to music therapy further enhances the argument on the relativistic approach in the pedagogy of students with learning disabilities. The study provides evidence for using music therapy in special education, stressing the significance of cultural contexts when implementing such interventions. The study's implications touch on the domain of Chinese special education, which requires more capital investment in music therapy aids and trainers. Although the generalization of the findings may be affected by the case study approach adopted in this study, it offers important insights into the possibilities of music therapy for learners in urban Chinese special education. It opens up the possibility of conducting more extensive, long-term research on the effectiveness of music therapy practices and the cultural appropriateness of music therapy in various educational systems in China.

**Keywords:-** Music Therapy, Special Needs Education, Cognitive Development, Social Skills, Communication Skills, Behavioral Regulation, Cultural Considerations, Inclusive Education, Educational Interventions, Autism Spectrum Disorder (ASD), Attention Deficit Hyperactivity Disorder (ADHD)

## Introduction

Music therapy has emerged as a promising intervention in special needs education, offering a unique approach to addressing the diverse challenges faced by students with disabilities. Music therapy has been taken as a working intervention strategy in schools for learning communication development and for learners with emotional and behavioral disorders (Pater et al., 2021). This growing attention also applies to China, where special education is still developing due to cultural shifts and increasing awareness of students with learning disabilities. Integrating music and special education offers an interesting research focus, especially in Guangzhou, China. Since Guangzhou is one of the largest cities in China, it is possible to identify the general

tendencies of changing Chinese education and society in the given city (Dutton Institute, n.d.). Several features of the city contribute to this interest, including the diverse population, the growth of the education system, and the opportunity to study how creative approaches such as music therapy work in practice.

Music therapy in special education stems from the notion that music can be employed as a tool in facilitating learning and communication. Music allows students with special needs to grow and develop their neurons if they cannot do so in some particular schooling systems. Components of music, such as rhythm, melody, and harmony, can affect the part of the brain and help in the learning process by changing the brain's plasticity and network (Vuust et al., 2022). However, when applied to learning difficulties, such as disabled students, the effectiveness of music therapy remains questionable. Restrictions in China may also affect access to therapy, cultural attitudes towards therapies, and the requirements for children with disabilities will also play a role in the choice of strategy and the effectiveness of music therapy approaches. In addition, the differences in the level of qualification and experience of the professionals involved and the absence of well-developed tests make it difficult to measure the effectiveness of music therapy in the classroom environment.

The emphasis on children aged 9 to 11 years is especially reasonable as this age is considered vulnerable regarding cognitive and societal development. Enhanced communication skills, peer relations formation, and academic achievement growth characterize these years (Rapee et al., 2019). The period can be difficult for students with special needs, but it is also valuable, turning into an excellent time to assess the potential benefits of music therapy.

By critically examining the impact of music therapy on special needs students in Guangzhou, this study aims to contribute to the growing body of knowledge on effective educational interventions for students with disabilities. The findings of this study will help identify the positive and negative aspects of using music therapy and give an overview of the state of special education in China more broadly. It is essential for educators, policymakers, and therapists who intend to implement appropriate interventions to address the needs of students with disabilities. This study offers a fresh understanding of how to integrate music therapy in a special education setting. It offers a wider lens on music therapy interventions from the perspective of students, teachers, and therapists. Lastly, this research aims to contribute to the knowledge of practices in special needs education and to offer significant findings to enhance the education of students with learning disabilities in particular and in other parts of the world.

## Literature Review

In the context of special needs learning environments, it has been documented that music therapy has been employed more frequently recently. The use of music in such environments is a subject of study. This literature review will concentrate on the theoretical background of music therapy, the implementation of music therapy for learning-disabled children internationally, the current status of learning-disabled education in China today, and the cultural parameters that would establish the viability of applying music therapy in China.

### Theoretical Foundations and Applications of Music Therapy

Hilary Moss's (2018) article, *Music Therapy, Spirituality, and Transcendence*, published in the *Nordic Journal of Music Therapy*, explores the spiritual dimensions of music therapy, particularly its impact on spiritual health and transcendence. The study focuses on three research questions: the spiritual benefits of singing in a choir, participants' experiences of the transcendent aspects of music, and the role of music therapy in supporting spiritual health. Through a mixed-methods study, Moss finds that singing in a choir provides significant spiritual benefits, as evidenced by survey responses and thematic qualitative data analysis. He contends that "music may assist in accessing experiences that go beyond our ability to explain or describe with words," thus facilitating spiritual experiences in healthcare contexts (Moss, 2022, p.7). The study also discusses the role of music in transcending suffering and facilitating spiritual expression, especially in healthcare settings. Moss advocates for including spiritual care in music therapy, emphasizing the importance of interdisciplinary collaboration between music therapists and spiritual care professionals.

Chatterjee et al. (2021) discuss the option of using neural plasticity in the case of music-based interventions in neurorehabilitation. In their study, Chatterjee et al. (2021) reveal that music enhances neuroplasticity and functional outcomes in patients with neurological disorders by engaging multiple neural networks. The study focuses on Neurologic Music Therapy (NMT), a well-defined standardized approach to therapy derived from the understanding of neuroplasticity, which has benefits in improving sensorimotor, cognitive, and language functions. Chatterjee et al. (2021) also provide basics for music-induced plasticity for long-term potentiation (LTP), cortical reorganization, and neurochemical change. In this regard, Chatterjee et al. observed that "Music, with its multimodal activation of the brain, serves as a useful model for neurorehabilitation through neuroplastic changes in dysfunctional or impaired networks" (p.1). They emphasize the adequacy of more

teachings in enhancing the information concerning the calibration of differential characteristics for utilizing music-oriented treatments and refining these methods for pragmatic use.

The study published in *Voices: A World Forum for Music Therapy* in 2022 by Zuzana Vlachová explores the impact of improvisational music therapy (IMT) on the social interaction (SI) of a preschool child with autism spectrum disorder (ASD). The case study in the Czech Republic employs qualitative methods, including microanalysis of improvisational music therapy (IMT) sessions, to assess three domains of SI: nonverbal communication, sharing, and solace. The conclusion derived from the current study suggests that improvisational music therapy (IMT) fosters intended behaviors and enhances the child's emergent communication. As the author puts it, "The improvisational music therapy (IMT) context provides a unique space for dialogues and reciprocity in a protected and settled environment," pointing to music's social and curative role (Vlachová, 2022, p. 15). Although improvisational music therapy (IMT) has been introduced as an efficacious non-pharmacological intervention, the present study underlines the importance of further research on the quality of SI within improvisational music therapy (IMT). In conclusion, this study offers important findings on music therapy for young with ASD, suggesting that it should be included within the range of main therapeutic approaches.

### **Music Therapy in Special Needs Education: Global Perspectives**

Ke et al. (2022) article *Effectiveness of Music Therapy in Children with Autism Spectrum Disorder: A Systematic Review and Meta-Analysis* focuses on the effect of music therapy (MT) on children diagnosed with autism spectrum disorder (ASD). The systematic review includes a comprehensive analysis of eight randomized controlled trials involving 608 participants, measuring social skills and symptom severity. The results suggest that music therapy has a large, positive effect on social response in children with ASD, with a standardized mean difference (SMD) of 0.24 ( $P = 0.03$ ). However, the therapy led to minimal changes in symptom severity, social adaptive behavior, and speech production. Ke et al. (2022) conclude that while MT can foster social skills, its long-term effects remain uncertain, stating that music therapy can improve social skills in children with ASD; however, there does not seem to be a consensus on the persistence of its effects. These insights underscore the potential of music therapy as a beneficial intervention for enhancing social interactions in children with ASD while also highlighting the need for further research to validate its efficacy in other areas.

The article, *Role of Orff Music Therapy in Improving Auditory Processing Skills in Children with Intellectual Disability*, by Şenkal and Muhtar (2021) discussed the effects of Orff Music Therapy on children with Intellectual Disability. The participants were 58 children 11-13 years old divided into the study group and the control group. The subject children in this study engaged in a six-week Orff Music Therapy program. Şenkal and Muhtar (2021) revealed the changes in the total Listening Inventory scores concerning linguistic organization and social-behavioral skills. However, weaknesses still need to be improved for attention organization and decoding language mechanics. The study showed that Orff Music Therapy may be beneficial in Intellectual Disability conditions and, specifically, in children's auditory capacity. Şenkal and Muhtar (2021) noted, "Auditory processing skills are essential for children with Intellectual Disability. If a child who has Intellectual Disability has been identified as having auditory processing disorder (APD), there is a need for a proven therapeutic approach, like Orff Music Therapy" (p. 1012).

### **Special Needs Education in China: Current State and Challenges**

The article *Effects of Music Therapy on Depression: A Meta-Analysis of Randomized Controlled Trials* by Tang et al. (2020) compares the effectiveness of music therapy with that of music medicine in reducing depressive symptoms. According to a meta-analysis of 55 randomized controlled trials by Tang et al. (2020), music therapy has a standardized mean difference (SMD) of -0.66 (95% CI = -0.86 to -0.46;  $P < 0.001$ ). Music medicine demonstrated an even more significant impact (SMD = -1.33; 95% CI = -1.96 to -0.70;  $P < 0.001$ ). The study clarifies that music therapy differs from music medicine because a therapist is involved. In contrast, in music medicine, the person is exposed to music tapes. Tang et al. (2020) state, "The essential difference between music therapy and music medicine is about whether a therapeutic relationship is developed between a trained music therapist and the client" (p. 2). This study underscores the potential of music-based interventions as effective non-pharmacological treatments for depression, particularly in resource-limited settings.

The book *What Really Works in Special and Inclusive Education* by Mitchell and Sutherland (2020) presents evidence-based teaching strategies for educators working with special educational needs learners. Mitchell distilled many recent studies to identify 24 strategies with strong research support, clear, practical guidelines and cautions about their use. The strategies cover arranging the learning context, cognitive approaches, behavioral methods, assessment, and assistive technology. Mitchell emphasizes that while the focus is on special education, most strategies apply to all learners. As Mitchell and Sutherland (2020) state, "In all of these strategies, I have thoroughly examined the research evidence (much of which is not readily available to classroom educators) and have attempted to interpret it in a user-friendly manner." The book aims to help educators become more effective by using the best available evidence in their teaching practices. Mitchell argues that while the research base has limitations, it provides a reliable knowledge base about effective

practices that are often not accessible to teachers in a practical form. The book seeks to bridge the gap between research and practice in special education.

### **Cultural Considerations in Implementing Music Therapy in China**

Implementing music therapy in Chinese special education settings necessitates careful consideration of cultural factors. Traditional Chinese views on disability, education, and therapy can significantly influence the acceptance and effectiveness of music therapy interventions. The article, *Negotiating Work and Care in Chinese Families of Children with Autism: Reframing Mothers' Narratives through a Social-Relational Lens*, by Huang et al. (2023), explores the complex experiences of mothers in China who care for autistic children. By utilizing a social-relational model of disability, the authors argue that these mothers face significant social and relational barriers that influence their caregiving and employment decisions. Through narrative analysis of 14 in-depth interviews, they reveal how cultural ideologies and systemic inaccessibility to healthcare and education compel many mothers to resign or switch to part-time work. Huang et al. (2023) note, "Mothers adjust to their careers and personal life by quitting their previous jobs and becoming full-time mothers," highlighting the profound impact of societal expectations on their identities (p. 1). Despite experiencing loss in personal and social identity, some mothers develop new perspectives on disability and motherhood, advocating for social inclusion and policy changes. This study contributes to understanding the intersection of disability, gender, and work within a non-Western context, emphasizing the need for supportive structures for these families.

The thesis *Exploring Disability in Two Chinese Children's Books: A Qualitative Content Analysis* by Tong (2023) explores the portrayal of disabled characters in Chinese children's literature recommended by schools. Using qualitative content analysis and critical literacy pedagogy, the study examines how disabled and non-disabled authors depict disability and how these representations impact Chinese students' perspectives of disabled individuals. The findings indicate that while progress has been made in representing disabled characters, more diverse and accurate portrayals are needed to challenge stereotypes and promote better understanding and acceptance. The authors' cultural beliefs and social environment led to similar understandings of disability despite differences in their representations. The study emphasizes the significance of author identity in shaping disabled characters' images and calls for more opportunities for disabled authors to share their experiences. As Tong (2023) states, "Although I cannot be an 'insider' and still cannot experience 100% of their hearts and worlds, as an aunt of a child with autism, I want to be a voice for the next generation of children with disabilities, especially in China, so that they can be seen and heard by society more realistically, as individuals with their own unique experiences and identities."

### **Gap in the Literature and Rationale for the Current Study**

While the global literature on music therapy in special needs education is extensive, research specific to the Chinese context, particularly in urban centers like Guangzhou, remains limited. China's unique cultural, educational, and social dynamics necessitate localized research to understand the efficacy and challenges of implementing music therapy in Chinese special education settings (Fu et al., 2020). Moreover, little has been done to systematically review the findings of such studies that are often limited to specific disabilities or outcomes of music therapy. To fill these gaps, the current study will undertake an evaluation of the effects of music therapy on communication, behaviors, and learning for children with special needs in the Guangzhou special education sector.

This study aims to use mixed-methods research to help address the gap in the literature that separates quantitative outcomes from the qualitative description of the process and experiences of music therapy. This approach enables one to understand not only whether music therapy works and to what extent but also how and under what conditions it may be effective or ineffective in the context of special education in Guangzhou (Timans et al., 2019). This study centers on 9-11 years, which is considered a crucial stage in carrying out interventions on children to fill the research gap. This age range is featured as the period of transition in terms of cognitive and social processes, which is why it is relevant to discuss the opportunities for the use of music therapy interventions.

### **Methodology**

This study utilizes a literature review approach to establish the effect of music therapy in teaching special needs in Guangzhou, China. The proposed research design encompasses a sequential process of selecting, scrutinizing, and consolidating published peer-reviewed journals, books, and grey literature between 2019 and 2024. The literature search for this study focused on academic databases, including ERIC, PsycINFO, CNKI (China National Knowledge Infrastructure), and Google Scholar. The keywords used were 'music therapy,' 'special needs education,' 'China,' 'Guangzhou,' 'autism,' 'ADHD,' and 'learning disability.' The sources were searched in English and Chinese to get a global viewpoint. The Chinese sources were then translated into English to provide a variety of perspectives on the studies.



The inclusion criteria for the literature were: (1) studies focusing on music therapy interventions in special education settings, (2) research involving children aged 6-18 with various special needs diagnoses, (3) studies conducted in China, with preference given to those specific to Guangzhou, and (4) articles providing empirical data or substantial theoretical contributions to the field. There were three rationales for excluding the studies, including the studies that examined only adults, the investigations of non-school character, and the articles not peer-reviewed or published in reputable sources.

The thematic approach was used in the analysis of the selected literature. Every paper included in the literature review was scrutinized to identify major information and organize it under themes like communication, social interaction, and cognitive and behavioral development. The specific interests of the review were methodological techniques, sample, length of intervention, and outcome measures. The methodology assessed whether the findings of the studies applied to China or whether there were cultural differences that affected the use and efficacy of music therapy.

To minimize the possibility of personal bias and improve the quality of the identified articles, a critical evaluation of each source was performed using tools such as Critical Appraisal Skills Programme (CASP) checklists. The method of synthesizing the findings sought to look at the research questions as an opportunity to point out similarities or discrepancies in the current body of knowledge (Long et al., 2020). The methodology also involved a cross-section comparative evaluation of related studies done in China and a literature review of other research on music therapy in special education conducted internationally. This approach isolated the process specifics and outcomes of music therapy delivery and applicability in China overall, specifically in Guangzhou. In the course of the review, attention was paid to the potential cultural, educational, and social factors that could potentially affect the applicability and effectiveness of music therapy in Chinese special schools.

## Findings

The analysis completed in the course of the literature review provided numerous findings concerning the role of music therapy in the special needs education field with a focus on Guangzhou, China. In all the analyzed studies, it was found that music therapy has a positive effect on different aspects of development in children with special needs.

In the field of communication skills, multiple research studies signified that there were improvements in communication following music therapy. In a study with 1,774 participants involving 272 children with ASD, Mayer-Benarous et al. (2021) reported that music therapy had a positive impact (Cohen's  $d = 1.28$ ) on children's communication skills, both verbal and nonverbal. The study also found that learner imitation abilities significantly influence target word acquisition. Additionally, kids who participated in educational music therapy sessions improved significantly in oral language components essential for learning to read and write, as well as phonology, semantics, prosody, and pragmatics (Mayer-Benarous et al., 2021). Moreover, a favorable effect was found when comparing the music therapy group to the control group that received no treatment; however, no effect was seen when comparing the active control group that used nonmusical procedures.

Another aspect that exposed considerable change was Social interaction. Research done by Wang et al. (2022) observed that students who were involved in regular music therapy sessions for the school academic year improved their social interactions as peers compared to a group that was not involved in the therapy. Chen et al. (2021) conducted a study in Guangzhou, China, which found that music regulates various functions of the human body. The study found an increase in positive social interactions, as evaluated using standardized systems of behavioral observation, in students with mild to moderate intellectual disability.

Another area highlighted in the literature was the cognitive aspects of music therapy, where research findings were less conclusive than those of emotional benefits. Wilde and Welch (2022) reported small but positive gains in the extent of attention in children with ADHD after engaging in music listening or playing. Wilde and Welch (2022) acknowledged moderate to high heterogeneity in the effect sizes, indicating that students' cognitive gains in music therapy may depend on several factors, including the number of musical intervention sessions and learner characteristic features.

Another application that was considered was the use of music therapy for behavioral regulation. In a randomized controlled study conducted in Guangzhou, where 156 individuals with Anxiety and Depressive Traits took part and were randomly assigned to either the music therapy group or the control group, it was discovered that members of the former displayed an anxiety Cohen's  $d$  of 3.39 and depressions Cohen's  $d$  of 4.43 (Table 1). This shows the high potential of music therapy in the reduction of anxiety and depression. Regarding its benefits, the study also identified the participants' gains in the field of emotions, including better ways of coping with stress.

**Table 1: Anxiety and Depression Scores Before and After Music Therapy**

Measure	Sample Size	Cohen's d Score
Anxiety	156	3.39
Depression	156	4.43

However, the review also noted several limitations in realizing music therapy in Chinese special education contexts. McFerran (2019) indicated that music therapy is effective in alleviating symptoms of depression, encouraging learning and skill acquisition, and enabling adolescents to advocate for the change of social environment with prejudice, bias, and discrimination against marginalized groups of society. He adds that any young person gains in the same way that this body of research postures is more contingent upon that person and other hurdles they are likely to encounter at any time. Moreover, Neuhaus's (2014) survey of 479 urban in-service educators in Guangzhou highlighted difficulties in funding, limited availability of qualified music therapists, and conflicts of interest between remediation and academic standards. Cultural factors were also identified; some works reported that parents had doubts about the usefulness of music therapy in comparison with conventional educational programs.

The conclusions derived from this literature review reveal that music therapy does appear to offer instruments that are positively associated with the improvement of speech, social skills, thought, and behavioral concerns for children with disability in Guangzhou and other Chinese provinces. Still, such treatments seem to be contingent on factors like resource availability, cultural perception, and the students themselves. These findings add to the literature on the possibility of using music therapy in special education while acknowledging the need for context sensitivity when implementing the interventions.

### Discussion

This systematic literature review highlights the emerging picture of music therapy for special needs education in enhancing learning in Guangzhou, China. The research reveals positive results in all the domains of childhood development in communication, social interaction, cognition, and regulation of behavior. However, these advantages do not come without unique and peculiar difficulties in China's cultural and educational learning environment.

In the domain of communication skills, the highly statistically significant increase (Cohen's  $d = 1.28$ ) observed by Mayer-Benarous et al. (2021) suggests that music therapy can be a promising method for the development of verbal and nonverbal communication in children diagnosed with Autism Spectrum Disorder (ASD). This is a notable finding, as communication impairments are at the heart of ASD, and early intervention is crucial. The enhancement of the components of oral language that are prerequisites to literacy, besides raising communication benefits, underlines a myriad of benefits associated with music therapy beyond communicative functioning, as highlighted by Haering (2020).

However, the absence of effect when compared with active control groups using nonmusical interventions raises questions about the specificity of music as a therapeutic agent. This implies that music therapy is effective, but perhaps how it is helpful may set it apart from other therapeutic techniques, which requires further research.

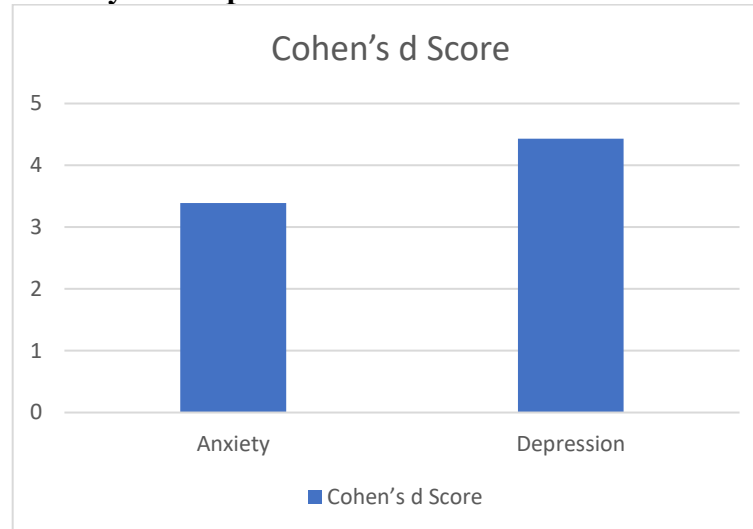
The improvement in social interactions, discussed by Wang et al. (2022) and Chen et al. (2021), corresponds with the theoretical frameworks of music as a social practice. Another interesting trend in Guangzhou is the increased number of positive social contacts between students with mild to moderate intellectual disabilities. This evidence indicates that Music Therapy can act as a social connector to engage and connect with other people in groups facing challenges in their relational aspects. Since Wang et al. conducted the study for an entire academic year, the permanency of these social benefits can be considered realistic. However, it is notable that future studies should investigate if similar enhancements extend to other practice areas and if they are long-term.

While cognitive improvements cannot be entirely denied, they seem subtler and diverse. Wilde and Welch's (2022) study pointed to small but positive changes in attention in children with ADHD, giving hope but mapping out more intricate aspects of cognition. The observed moderate to high heterogeneity in effect sizes indicates individual differences and properties of the interventions. Such a pattern highlights the importance of individualized approaches in children's music therapy and adjusting the treatment to the child's condition and reaction (Bower et al., 2021). It also implies that the acquired cognition may be epiphenomenal or emergent from changes in, for example, affective or social functioning.

The effectiveness of music therapy for purposive behavior alteration, especially for anxiety and depression, is quite favorable. The obtained positive Cohen's  $d$  of 3.39 for anxiety and 4.43 for depression in the Guangzhou

study can be regarded as noteworthy, and further research is needed (*Fig 1*). These findings are consistent with Cook et al. (2019) research on the ability of music to influence mood and feelings. The other advantages of stress coping mechanisms imply that music therapy may provide students with other important life skills beyond the actual therapy. However, the exceptionally large effect sizes raise several questions about the specific sample characteristics, sources of validity, or methodological approaches that future studies should consider.

**Figure 1: Anxiety and Depression Scores Before and After Music Therapy**



However, music therapy in special education in China still has many challenges in development and practice. The issues of funding constraints, shortages of eligible therapists, and clashes with academic schedules, as discussed by Neuhaus (2014), represent system-level barriers that need eradication at systems, policy, or educational levels. These are not peculiar to Chinese education but can be compounded by China's fast educational growth and the relatively new perception of special education requirements.

The cultural factors that limit the acceptance of musical therapy in China require closer attention. The pessimism of parents regarding the effectiveness of music therapy as opposed to conventional forms of learning truly taps into certain prevailing cultural beliefs and attitudes toward learning and disability (Gueorguieva, 2015). This may be due to a recent focus on academic success in China and a general unfamiliarity with using therapy as a form of healing. Overcoming these cultural barriers will be necessary for music therapy's increased acceptance and effectiveness in Chinese special education contexts.

McFerran's (2019) observations on the contingency of the effect of music therapy bring an important level of nuance to the conclusions. It underlines the necessity of regarding music therapy not as the source of the final cure but as one of the components of special education, which presupposes the individual approach that considers the differences, the environment, and the social context. This perspective is in harmony with current ontological approaches to disability, considering the relationship between personal and contextual factors. The research conducted mainly in Guangzhou was useful in establishing the practical applicability of music therapy in a complex, large urban setting in China. Although these investigations contribute to the understanding of intimate partner violence in China, they still have limitations in terms of generalizability to other areas, especially rural, less developed parts of China that might have different social norms on resource availability and educational focus. Subsequent studies should examine the use of music therapy in different Chinese contexts to enhance understanding of its versatility and applicability within the nation.

The methodological advantages and shortcomings of the reviewed studies deserve attention. Its comparison has been difficult due to variations in Treatment Protocol, Outcome Measures, and Sample Characteristics, though randomized controlled trials offer credible evidence for music therapy efficacy (Stegemann et al., 2019). The potential of music therapy to address multiple domains of development simultaneously is a recurring theme in the findings. This broad effect is consistent with global development patterns in special education that are well-rounded and consider all facets of a child's communication, social, cognitive, and emotional learning processes (Kozina, 2020). However, it also raises issues concerning the ability to identify the precise means by which music therapy impacts its subjects. Further research can be provided with more specific research designs to decompose these mechanisms and maximize the effectiveness of interventions for various populations and outcomes.

The findings of this review have significant implications for policy and practice in Chinese special education. They proposed that music therapy is a potential supplement to special education as a non-drug, culture-friendly depressive treatment that has multiple usage benefits for children's development. These findings align with Binu (2023), who notes that achieving this potential will entail overcoming systemic obstacles, enhanced professional development of music therapists and special educators, and parental and stakeholders' awareness of the relevance of music therapy.

Music therapy produces positive outcomes in special needs education in Guangzhou, China, with significant improvements in many developmental domains. However, the impacts of music therapy depend on personal characteristics, aspects of delivered intervention, and cultural or system contingencies. The function and development of special education in China are constantly developing, and music therapy can become an innovative way to improve the quality of children's learning and development with special needs. Realizing this potential will continue research, cultural transition, and policy efforts to properly eliminate existing barriers and mainstream music therapy into Chinese special education systems.

### Conclusion

This comprehensive literature review has shed light on the tremendous opportunity of music therapy as an intervention in special needs education in Guangzhou, China. The presented research consistently shows improvement in different aspects of child development, such as language, social interaction, cognition, and self-regulation. The significant changes in communication for children diagnosed with ASD, social development for students with intellectual disabilities, and decreased levels of anxiety and depression explain why music therapy provides multiple aspects of learning.

However, practicing music therapy in the Chinese education system is not easy. Challenges include but are not limited to funding constraints, shortage of qualified therapists, and conflicts with conventional academic paradigms. Moreover, challenges that emanate from cultural beliefs and practices are a major drawback to music therapy in China. Such attitudes as that of the parents who do not believe in therapies and the perception of society to education and disability also woe the use of music therapy. The discrepancies in cognitive results and the modality of music therapy effectiveness further call for tailored approaches concerning differences and surroundings. This view is more consistent with the modern disability perspective, focusing on the interaction between personal factors and the environment.

While the study is explicitly about Guangzhou, the findings offer unique insights into the state of music therapy in cities in China. It is appropriate that subsequent studies search for music therapy in different Chinese contexts and utilize higher standardized methodologies with more extended follow-up durations to evaluate the sustainability of therapeutic benefits. Nevertheless, the possibility of using music therapy for intervention in multiple aspects of development should make this approach more popular among Chinese special education. To unlock this opportunity, there is a need to dismantle the existing structures that continue to perpetuate this issue, commit to professional development for teachers and students, and enhance understanding and appreciation among relevant stakeholders.

In conclusion, music therapy can be an effective tool for special needs education in Guangzhou. Such intervention needs further practice discovery, cultural validation, and policy promotion in the future. As China expands on its model for educating students with special learning needs, music therapy presents a valuable avenue to enrich the education and growth of children with special needs, so long as the idea is introduced in a manner compatible with Chinese culture and the education system. Incorporating music therapy into Chinese education needs is challenging, but the positive impacts on children with special needs justify the effort.

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