



Scenario Research on Music Therapy Network Resource Platform for Children with Autism Comparative Research on Chinese and English-Preferred Societies

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Abstract. This article adopts the methods of classification and sampling, literature review, keyword search, and content analysis to collect data from multiple perspectives and aspects and conduct a scenario exploration of major online resource platforms related to music therapy for children with autism at home and abroad. This article also summarizes the characteristics of the current domestic and foreign network resource platforms, weighs the advantages and disadvantages, and evaluates the convenience, popularity, audience, and credibility of music therapy resources for children with autism. Finally, this article puts forward some relevant opinions and suggestions from the perspectives of the government, online media, and individuals, hoping to provide reference information for subsequent investigations or studies.

Keywords: music therapy · children with autism · online media platform · social cognition

1 Introduction

The concept of autism was coined by German psychiatrist Eugen Bleuler in 1911, and it was first described clinically in the 1940s [1]. But until the 1970s, autism came to be better known and many parents still confused autism with mental retardation and psychosis. In 1982, Professor Tao Guotai diagnosed the first child with autism in China. Since then, the novel word “autism” has officially entered China. In 2005, “autism” was included in the list of disabled persons in China, and in the following year, China officially listed “autism” as “mentally disabled” and autistic patients were included in the Chinese disabled person security system. It is reported that there are more than 10 million people with an autism spectrum disorder in China, of which more than 2 million are children aged 0–14, and the number is increasing by 200,000 per year [2].

Autistic disorder is one of the most common diseases that occur in a child in the United States [3]. It was not until the 1940s that music therapy first appears in human history. Pioneers worked with autistic children in hospitals, schools, and institutions. Part-time music therapists and volunteers were started to be employed by hospitals

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L. F. Ying et al. (Eds.): ICELA 2022, ASSEHR 730, pp. 568–579, 2023.

https://doi.org/10.2991/978-2-38476-004-6_70

and institutions. However, there was no specific documentation about music therapy at this time. From the 50s to 70s, the milestone of music therapy occurred as the society of music therapy was founded and professional publications started to circulate. At this point, both structured and improvisational forms of various music activities were adapted for self-expression, socialization, rehabilitation, psychological enrichment, and recreation. The idea of music therapy was kind of new for people. After music therapy became a formal discipline at Michigan State University in 1944, it has been introduced to China as a new discipline in the early 1980s. It did not become a standardized practice until later in the 20th century. Stevens and Clark published the first experimental study about the effects of music therapy on autistic children in 1969, which was one of only three music therapy related to autistic children from 1950 to 1989. From the 1970s to the 1980s, music therapy continue to develop globally, with music therapy organizations formed in many countries like Denmark, Germany, and Canada. From 1990 to 1999, the Education for All Handicapped Children Act was revised into the Individuals with Disabilities Education Act (IDEA) and autism was categorized as a handicap, which provides huge opportunities and employment for music therapy for autistic people [4].

In 1989, China established a national music therapy society organization--China Music Therapy Society, but the overall level of its development is still backward, and it is still in the initial stage of exploration [5]. At present, a series of related experimental studies in China have proved that music therapy has a certain intervention effect on autism.

It can be seen that foreign research is decades earlier than Chinese research, and there are some shortcomings in domestic research: the observation variables used for evaluation are too single, and the practicability is not strong; the intervention methods used are relatively simple, and the course design and intervention methods are not rich enough [6]. From the above data, it can be found that in recent years, with the increasing prevalence of autism, people have begun to pay more attention to this group, and the public has become eager to explore treatments for autism.

However, according to the survey report by Shenzhen Autism Research Association, only 56.3% of parents accept that their children are diagnosed with autism, 27.2% are in a state of doubtful belief, delaying the best treatment and correction period, and 16.6% cannot accept that their children have autism Symptoms [7]. Parents' ignorance of autism and traditional concepts lead to the late discovery of children's symptoms and slow treatment. In addition to the patient's family members, the general public still has problems with perception and cognitive bias for autistic patients. People currently also have a lot of misunderstandings about the treatment methods for autism. Some people mistakenly believe that simple medication and injections can be cured, and there are very few people who know about music therapy methods.

Actually, among the various intervention methods and techniques for children with autism, music therapy has its unique advantages. Music therapy is a borderline interdisciplinary subject that integrates music, medicine, and psychology, and uses music-related activities for therapeutic purposes to achieve autism intervention effects. The quality of predictability and structure in music serves as a systematic way to promote appropriate and meaningful interpersonal responses, helping children with autism develop tolerance and flexibility to build relationships with others through social engagements [8].

In more recent times, improved computer technology allowed autistic children to own devices like mobile phones, which allows music therapy to reach beyond the dimension of traditional musical instruments [9].

Compared with the currently known methods such as psychotherapy, psychotropic drug therapy, holistic dialectical treatment of traditional Chinese medicine, diet therapy, and surgical treatment, music therapy mostly stimulates the auditory system to stimulate the brain and this can avoid the side effects caused by drug stimulation. It is easier to help patients feel happy during musical activities, and unlike psychotherapy, one more good thing is that music therapy has the strong point of quicker results. So this therapy is more likely to be accepted and adopted by the public.

This article will conduct a multi-angle and multi-faceted investigation and discussion on the current music therapy network resource platform for children with autism at home and abroad. Summarize the characteristics of current network resources at home and abroad, weigh the advantages and disadvantages, and analyze the convenience, audience, authenticity, and effectiveness of resource acquisition. In the end, this article summarizes the characteristics at home and abroad, and put forward relevant views and suggestions, to provide reference information for follow-up research.

2 Domestic Research and the Latest Audience Survey Statistics

Among the survey respondents, female audiences between the ages of 36 and 50 account for a larger proportion. The data shows that almost everyone believes that the current mental health of children should be paid attention to, and nearly 98% of people believe that music therapy is necessary for people with autism. However, in terms of knowledge about autism and music therapy, almost half of the people who have only heard of autism and less than 4% who think they know autism very well. Nearly 60% of them are completely unaware of music therapy for autistic patients.

Through further investigation of the domestic public's understanding of autism and music therapy, it is found that most people have learned about autism and music therapy through various online channels. In terms of autism, the percentage of people who learned about autism through watching autism-related film and television resources account for the maximal proportion, ranking first, followed by domestic and foreign video websites and online forums. Furthermore, the third place altogether of internet resources is occupied by domestic and foreign-related popular science websites, while only a small number of people understand it through related apps and online courses. When it comes to music therapy, in the remaining 40% of people who know music therapy, most of them obtained information through domestic and foreign websites and forums, followed by TV and film resources. Except for a small number of people due to majors and course selection, almost no one learned about music therapy through related apps.

Through interviews and further analysis, the following feedback can be got: the domestic public generally believes that the popularity of music therapy for children with autism is very low, the popularization and publicity of domestic websites are far from enough, and the content that can be found on the Internet generally lacks professionalism and credibility.

3 Current Network Resource Platform Scenario Survey

The current era of big data has the feature of abundant network resources, various types of data, wide dissemination, fast speed, and high efficiency. This part of the article will study the situation of network resource platforms in China and abroad respectively and give some conclusions.

3.1 China Network Resource Platform Scenario

According to the Chinese public's understanding of music therapy for children with autism and methods, domestic online media can be divided into five aspects: video and popular science websites, television resources, social media resources, mobile media information, and app resources. After conducting multi-angle data collection, literature review, on-site investigation, and further evaluating the advantages and disadvantages, the following situations can be learned.

3.2 Video and Popular Science Websites

In terms of audience and popularity of online media, the attention of the public to autism media started late and is stabled in a low state of attention [10]. Domestic video websites paid little attention to autism, especially music therapy, and there is a lack of public welfare short videos promoting autism and music therapy. Although compared with video websites, the popular science content of autism-related knowledge on domestic popular science websites is relatively sufficient, their popularization effectiveness is still relatively low. Some of them have the problems that the text content lacks intuitive and effective information and a systematic layout, which makes it difficult for the audience to read deeply.

Apart from that, judging from the accuracy and reliability of the information provided by the network platform, video websites have a biased cognitive perspective on autism-related videos, and most of the content is unattractive. Data shows that most of the domestic video websites' attention to autism groups is still superficial, and most of the attention to autism is to satisfy their curiosity [11]. Popular knowledge websites are more aimed at the general public, and their explanations of autism and music therapy are relatively basic. Most content of the Q&A is simple, repetitive, messy, and low-professional, without audit standards and scientific theoretical support. This still leads to a low level of public awareness of music therapy for autistic children.

To sum up the advantages and disadvantages, as the most popular online media, domestic video websites and popular science websites have the advantages of strong convenience, high audience, and wide dissemination. The production cost of the website is low and it is user-friendly. Small online video is deeply loved by people nowadays, with less time-consuming, widespread, and fast speed. Internet resources have the characteristics of many-to-many, dissemination, and large coverage of the network. Based on the arousal theory and mass society theory that network media acts on people, some communication scientists believe that the tools of mass media can already undertake direct theoretical propaganda tasks, and online platforms should change in the direction of content diversification, three-dimensional form, and diversification of channels [12].

The use of website resources to guide people can produce long-term macro changes for the public. Therefore, it is effective and worthy of promotion to develop and plan video websites and popular science websites to help the public judge and understand autism and music therapy. However, although domestic knowledge websites have more and more articles on music therapy for autistic children, the effectiveness of popular science is still lacking, and the emphasis on video websites is wrong. The content of the website lacks in-depth discussions and issues that are close to people's livelihoods.

3.3 Television Resources

Television resources include various domestic and foreign TV news, talk shows, serials, movies, and documentaries about music therapy for children with autism. Among them, character documentaries, as a form of documentaries, are more and more popular among audiences and have also become an important means of publicizing autism. Many film experts believe that character documentaries can reproduce the life records of relevant characters through a real vision, and at the same time improve the audio-visual appeal, they can also show correct social values, thus triggering the audience to think about relevant social issues. According to previous questionnaire surveys, although movies about music therapy for children with autism do not account for a large proportion of autistic movies, most Chinese audiences have learned about autism through TV, movie documentaries, and other channels.

3.4 Social Media Resources

Social media includes social networking sites, Weibo, WeChat, blogs, forums, podcasts, etc. It mainly stems from the spontaneous contribution of a large number of netizens, extracts, create news information, and then disseminates it. Social media has the characteristics of a large number of people and spontaneous dissemination. With the widespread use of modern young people, social platforms are full of vitality and inclusiveness. Social media can update and change anytime, anywhere, with strong immediacy and fast information flow. It has greatly enhanced the initiative of users, created one hot topic after another in people's social life, and further attracted traditional media to follow up. The emergence of social media also has greatly changed the original social information dissemination structure, established a closer social relationship, and now plays an increasingly important role in network media. In China, the most popular social media are Weibo, WeChat, and QQ. As of June 2020, the usage rate of WeChat Moments was 85.0%, and the usage rates of Qzone and Weibo were 41.6% and 40.4% respectively [12].

The development of social media has brought many benefits: social media can be used cheaply or for free by the general public, and the content can be spread globally. It is rich in forms and has no stratum. As it is popular and convenient, and it can meet individual needs, no matter who you are, or where you come from, any organization or individual can share or obtain information and resources on social platforms. The professional threshold of social media is relatively low, and it prefers to publish light, thin and short pictures and texts. The interface design is convenient and simple, so the production time is short and the cost is low. It is encouraging that social media can

be used as a medium to connect patients themselves, ordinary netizens, music therapy teachers, non-profit organizations, professional training institutions, and users of major official news reports, making the exchange of information and the sharing of resources more flexible. Limited, which can also allow the patient's family to receive more effective help. Through the use of social media, the content of public welfare activities for children with autism can be greatly deepened and the form of public welfare communication can be optimized. At present, many team organizations for music therapy for children with autism use this method to carry out online publicity, and have achieved certain results.

On the other hand, the growth of social media also brings some challenges. While domestic online social media attracts a large number of users, there are also some problems such as pan-entertainment, extreme public opinion, homogenization, and marginalization of information [13]. The media's pursuit of capital has been further expanded, and there are many moves to gain network traffic, which leads to the credibility of resources continuing to decline. In addition, the low threshold of social media leads to more uncontrollable public opinion information, frequent online disputes, and increased supervision difficulty. There are still problems with ignoring the demands of special groups and the autistic group is still in a weak position.

When it comes to official accounts, although it has the most public views, retweets and comments compared to other types of accounts, there are still many problems with music therapy and autism reporting. It is a pity that the major official accounts only push some publicity about caring for autistic children on World Autism Care Day. The overall number of autism-related Weibo posts is relatively small, so the influence on the public is greatly reduced. The main topics of the report are character stories, social events, and medical science popularization. The content is only focused on appealing to love and promoting positive energy events. Some official accounts have repeated content and low quality and most of them rarely involve music therapy-related content. There is also a lack of reports on policies and guarantees related to autism, and the reports also lack practical suggestions, ignoring the actual concerns of patients and their families about survival, education, employment, marriage, and love. Research reported on the official Weibo account of the People's Daily in 2021 also showed that the autism community and music therapy-related resources have been marginalized for a long time [14]. The report format of many official accounts is monotonous, the theme is single, the content is mostly stereotyped, and the case lacks follow-up reports.

3.5 Mobile Media Information

Smartphones, SMS, and other mobile media have the characteristics that information is not limited by time and space, can meet the different needs of different groups of people, and is more personalized.

Conveniently, information resources about music therapy and autism can be customized, actively pushed, and even integrated into all aspects of people's lives in the form of advertising messages. However, at the current stage when domestic information control is not strict enough, SMS messages are easy to be faked, and the content pushed by the mobile terminal is often too exaggerated, untrue, and grandstanding. What's worse is that this method will be used to deceive trust, steal user privacy, and cause bad influence.

To sum up, while the current domestic new media supervision is not yet perfect, perhaps relying on street advertisements in life, building TVs, public welfare videos on buses and trains, scrolling notes, and other mobile media can make slogans such as “music therapy” or “autism” closer to public life to a certain extent and have a publicity effect, but such a method does not allow people to understand the details of its methods and effects. And only relying on the automatic push of relevant information from mobile media is not formal enough, so the credibility is not high, and it is often treated as spam by users, which is not worth the loss. Therefore, compared with the above-mentioned other online media promotions, it is too idealistic and not feasible to promote the information about “music therapy for autism” to the public at an extra cost to invest in mobile media. But it is promising that in the future when children with autism have been generally recognized by society, the method of music therapy has been recognized by the public, the educational institutions and related regulations for children with special needs in society have been improved, and the domestic professional education team has sufficient strength, perhaps then mobile media can play its real advantage.

3.6 App Resources

With the development of the mobile Internet in recent years, the autism app has also been born. Since the research and development of autism apps in China are still in their infancy, unlike foreign autism apps that focus on treatment, domestic autism apps focus more on prevention and awareness. Through audience analysis, there are currently three groups of users of autism apps in China: First, families with autism, which are the most common. Parents usually use software to help young children train, learn about autism, or record companion logs. The second is autism education and rehabilitation institutions. Such software is usually used as a teaching intervention aid for institutions, which are promoted through the platform. The third is other relevant persons in the autism industry. Volunteer organizations and groups use the app to promote offline activities.

The training content of the autism app mainly focuses on the rehabilitation training of language, behavior, and cognitive ability. The current well-known autism App design mainly refers to the following therapies: Picture Exchange Communication System (PECS), Behavior Decomposition Training Method (DTT), and Applied Behavior Analysis Therapy (ABA). At present, a public welfare app “Touch” for autistic children with emotional design has also been produced in China [15].

However, because music therapy methods must be based on teacher-student interactive activities to play a good intervention effect, music-related apps can usually only be used as auxiliary tools. Apart from that, some music therapists believe that listening to music by purchasing or downloading some so-called “music therapy albums” may have a relaxing effect on the mind and body, but it cannot be called orthodox music therapy. Music therapy is difficult to implement and function without the intervention of a music therapist.

In the music area automatically classified by the app, there is no special music area for special groups. The top singles obtained through the search are mostly public welfare songs and excerpts from parent-child programs. Other autism music albums are usually made by Netizens organized and released spontaneously, and even though the title was named “Special for Autism”, most of the music content did not actually play a role in

targeting autistic patients, and some just organized some sad or soothing pop songs into the album. The click-to-collection of this type of music is also small, and most of the people who choose to click to listen are also skeptical about the efficacy of music therapy on such music albums. It can be seen that the public has a certain misunderstanding and confusion about music related to the treatment of autism. By searching for music therapy-related entries, the music displayed is mostly aimed at relieving anxiety and insomnia symptoms, and some light music and white noise, while almost no music is marked for autism.

4 Foreign Network Resource Platform Scenario

4.1 Video Platforms

With around 300 million American social network users, American people spent the most time on TikTok and YouTube, with an average of 45.8 min on TikTok and 45.6 min on YouTube daily. Typing the keyword “autism” on YouTube, there exhibit significant amounts of results. Videos about autism receive a huge amount of audience and popularity on YouTube. By scrolling through the most viewed YouTube videos, it is not hard to find out that generally, the most viewed videos are entertaining videos clips about people with ASD that shows a tendency of showing solitude for them by showing the unique feature of an autistic child or the difficulties the child’s family are facing. Nevertheless, videos on YouTube are shown by their relevancy when typing the words “autism”, which means what is first seen by the audience when searching for autism are those videos that introduce the basic knowledge, such as symptoms, and causes, of ASD in a professional, scientific theoretical support way. Many of these videos are produced by reliable accounts like TED, BBC, and Universities departments, for instance, Yale School of Medicine. People get to learn more about ASD on a more in-depth level, whether biologically or sociologically. This largely increases the awareness and knowledge about autism of the general public. For autism music therapy, there are as well many related videos, including video clips of music therapists using their strategies to calm autistic children and videos showing many practical skills that can be used in daily life to comfort autistic children. Instead of music therapy organizations, most of the producers on YouTube as well as TikTok that make videos about certain topics are individual music therapists showing the significant result using their methods and their experience with autistic children. On TikTok, specifically, there is a large number of videos showing people’s attitudes and experiences with autistic people. Most of these videos have the theme of showing empowerment and support for people with ASD. Moreover, there are many videos made by autistic children themselves, sharing their experiences in everyday life, attracting large discussion.

4.2 Television Resources

For traditional media like television, the contents shown on it largely represent the profit of many stakeholders and the taste of consumers. Compared with social networks, where people can spontaneously stand up for the autistic community, people with ASD

are less likely to be shown on television as a minority group. However, the popularity and convenience of films and televisions largely affect the majority of people's perceptions. Often, the autistic character can be significantly different from "normal" characters. Many stereotypes of autistic people on the big screen include: Autistic people never make eye contact, they are unable to communicate verbally, they are unable to respond to affection, and they do not smile [16]. With a large number of viewers, there are not many positive related portraits of autistic characters. Although this generates stereotypes of autistic people for the general public, it could serve as a way for the general public to understand some basic information about such groups of people. In more recent times, more commercials on television focus on portraying more positive sides of autistic people's life. These public service commercials call out for empowerment and support for people with ASD and can eliminate the stereotype the general public had for autistic people.

4.3 Social Media Resources

As the time American people spent on traditional media like television and radio is decreasing, more people are shifting toward digital media. The Internet has a household penetration rate of around 87 percent today. About 300 million American use social networking sites. Consider Twitter as an example. Twitter, a microblogging and social networking service on which users post and interact with messages known as "tweets", had more than 330 million active monthly users. Autistic people generally receive a certain amount of attention on Twitter. Simply typing the keyword "autistic", there show 833 results. Of those tweets with the highest reach, there is around 48 percent of the tweets are about the empowerment of ASD individuals and community support, 9 percent related to credible information about the vaccine and civil issues, and 6 percent related to books, movies, and celebrities about ASD, and 5% are about the treatment of autism. There are also a significant amount of tweets about music therapy for autistic people. By clicking into their accounts, it is shown that people who commented on autistic music therapy can generally be divided into two categories. First are personal accounts, further divided into those with a personal interest in autistic music therapy and families/friends of autistic people. Then, there are official accounts of musical therapy organizations where treating ASD people is only part of their fields. These organization generally wants to increase publicity for their websites, therapists, and ongoing music therapy events. Most of these music therapy organizations have accounts with followers of around 500 to 10000, and few of them have followers of more than 10 thousand. Overall, the majority of tweets still call out the empowerment of people with ASD and mention promoting music therapy for ASD people. With a large base of users, Twitter provides a convenient platform for stakeholders of music therapy for ASD people to promote music therapy and communicate with others with the same interest. More families of ASD patients can find help by contacting music therapy organizations. However, most tweets about music therapy for ASD people generally have a relative emotional tone, which can make these comments less unbiased. Therefore, Twitter is not a platform appropriate for more professional discussions.

5 Possible Development

It is not enough to promote and share autism music therapy resources through state support, relevant government policy guarantees, and mainstream media and official organizations. Individuals can also make full use of the Internet to make contributions. Families and patients with autism should also get involved and take full advantage of online advocacy methods. Individuals can use the Internet and other self-media means to express their opinions, call for public understanding and participation in music therapy for the autistic community, and attract media attention. People can spontaneously establish some related blog groups to attract and encourage parents of autistic patients to join, and exchange the experience and process of learning music therapy with each other. Families with autism can be encouraged to take the initiative to engage in some social activities. It can also make a difference by engaging in some “self-writing” activities. On the one hand, it can meet the realistic needs of autistic families to express themselves, and on the other hand, it also helps to break down the traditional misunderstood image of autistic families. It is necessary to use online platforms to enhance the connection between autistic families and society, and to further promote the repositioning of self-identity and civil rights of autistic families.

It is also of great significance to train more music therapists for children with autism by introducing technology and talents and increasing capital investment. In addition to strengthening the exchange of Chinese and Western music therapy resources and establishing a special resource library; the government also needs to improve policies and institutional guarantees, improve the quality of the treatment team in the field of music therapy, and rationally use the characteristics of Chinese and Western music to achieve appropriate autism treatment effects [17].

6 Conclusion

In conclusion, autism is one of the human diseases that cannot be completely cured at present. The public's cognition and understanding of its science directly determine whether children with autism can be diagnosed early and receive early intervention and training. Music therapy has a unique impact on providing a safe and enjoyable experience for children with autism, and it is a therapy that is well worth trying. At present, the public's awareness and understanding of music therapy and autistic children in China still need to be improved. Understanding the status of relevant domestic and foreign network resource platforms will help us develop network platforms well in the era of big data, and make good use of network resources, to promote general cognition and scientific understanding of autistic children and related music therapy methods. For this, the Chinese government, online media, and individuals are all responsible and must work hard for this.

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