

The Healing Effect of Music on People with Autism Spectrum Disorder

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Abstract: Now that autism is more common, it is essential to study how to treat autism. Generally speaking, the methods to treat autism include Applied Behavior Analysis (ABA), etc., but exploring other ways is essential. The influence of music as a flowing art on people is difficult to estimate. As a new frontier discipline, music therapy is necessary in treating special people. This paper briefly summarizes the effects of sensory processing and music on the emotions and sensory integration of autistic patients, as well as some standard methods of music therapy, and appeals to more people to pay attention to the auxiliary therapeutic effect of music on autistic patients. The paper concluded that collaborations between music therapists, neuroscientists, educators, and caregivers hold the key to harnessing the holistic benefits of music for individuals with autism. By pooling their expertise and insights, we can develop comprehensive programs that harness the therapeutic potential of music and amplify its impact across different dimensions of autism.

Keywords: Autism spectrum disorder (ASD), music therapy, practical application

1. Introduction

Autism Spectrum Disorder (ASD) is a complex and neurodevelopmental condition that affects social interaction, communication, and behavior. It is referred to as a "spectrum" because it encompasses a wide range of symptoms and severity levels, with each individual experiencing ASD in a unique way. [1]

Key characteristics of ASD include challenges in understanding and using verbal and nonverbal communication, difficulties in forming and maintaining relationships and engaging in repetitive behaviors or restricted interests. These characteristics can manifest differently in each person, leading to diverse behaviors and abilities among individuals with ASD.

ASD typically becomes noticeable in early childhood, often before age three. However, the specific signs and symptoms can vary widely. Some children with ASD might exhibit delayed speech development, struggle with making eye contact, have difficulty understanding social cues and emotions, or display intense focus on specific topics or objects.

ASD is believed to have a multifactorial etiology, meaning that genetic and environmental factors play a role in its development. Research suggests that a combination of genetic predisposition and various prenatal and early-life environmental factors can contribute to the onset of the disorder.

Early intervention and specialized therapies, such as applied behavior analysis (ABA), speech therapy, and occupational therapy, can significantly improve the outcomes and quality of life for

individuals with ASD. While there is no known cure for ASD, interventions can help individuals develop essential life skills, improve communication, and enhance their social interactions.

Public awareness and understanding of ASD have increased significantly over the years, leading to more inclusive approaches in education, employment, and social integration for individuals on the autism spectrum. It's important to recognize that each person with ASD is unique, and their strengths and challenges should be appreciated person-centered and respectfully.

Music therapy is a new frontier discipline that integrates musicology, psychology, medicine, anthropology, and other fields. In human experience, few things possess the power to transcend language barriers, evoke deep emotions, and connect people on an intrinsic level like music does. Beyond its aesthetic appeal, music has proven to be an incredibly versatile tool with diverse therapeutic applications. One particularly fascinating area of study is its impact on individuals with autism spectrum disorder (ASD). Autism is a complex neurodevelopmental condition characterized by challenges in communication, social interaction, and repetitive behaviors. While there is no one-size-fits-all approach to addressing the diverse needs of autistic individuals, the therapeutic potential of music has garnered significant attention and recognition for its ability to engage, stimulate, and enhance the lives of those with ASD. [2]

This exploration into the therapeutic potential of music for autistic individuals delves into the multifaceted ways in which music can positively influence various aspects of their lives. From improving communication skills and facilitating emotional expression to reducing anxiety and promoting social engagement, the piece has shown remarkable promise as an adjunctive therapy in the comprehensive treatment of autism. Moreover, its nonverbal and intuitive nature makes it an ideal medium for individuals struggling with traditional forms of communication. [3]

Throughout this investigation, we will examine the underlying psychological and neurological mechanisms that make music an effective therapeutic tool for autistic individuals. Neuroimaging studies have shed light on how music activates different areas of the brain, fostering connections and potentially enhancing cognitive functions. Additionally, the rhythmic and melodic components of music can tap into the emotional centers of the brain, providing an alternative channel for emotional expression for those who may find conventional methods challenging.

The journey into the therapeutic potential of music for autism extends beyond theoretical understanding. We will explore real-life case studies and success stories that underscore the transformative impact of music therapy. From structured interventions led by trained professionals to personalized playlists that resonate with individual preferences, a broad spectrum of approaches harness the power of music to cater to the unique needs of each autistic individual.

It is important to note that while music therapy holds immense promise, it is not a panacea for autism. Instead, it is an innovative and complementary approach that can work with other therapeutic strategies. As we delve into the research, methodologies, and lived experiences that illuminate the potential of music to improve the quality of life for autistic individuals, we must also recognize the ongoing efforts to refine and expand this field of study.

In essence, this exploration into the therapeutic potential of music for autistic individuals invites us to appreciate the profound impact that music can have beyond mere entertainment. It encourages us to recognize the therapeutic value of music to foster communication, emotional expression, and social interaction among individuals who experience the world in unique ways. As we journey through the following sections, the remarkable interplay between music and autism will become increasingly evident, underscoring the vital role that this art form can play in enhancing the lives of those on the autism spectrum.

2. Music's ability to modulate sensory sensitivities

Music has a powerful and well-documented ability to modulate sensory sensitivities and impact human experiences in various ways. [4] Here are some ways in which music can influence sensory perceptions:

Emotional Response: Music has a profound impact on emotions. Certain melodies, harmonies, and rhythms can evoke specific emotions, leading to mood and sensory perception changes. For instance, upbeat and energetic music might increase alertness and excitement, while slow and soothing music can induce relaxation.

Focus and Attention: Different types of music can enhance or disrupt focus and attention. Some individuals find that listening to music while working or studying helps them concentrate, while others might find it distracting. The choice of music genre and tempo can play a role in influencing attention levels.

Pain Perception: Studies have shown that music can alter pain perception. Engaging with music can trigger the release of endorphins, which are natural pain-relieving chemicals in the brain. This phenomenon is sometimes used in medical settings to help manage pain during procedures or recovery.

Sensory Integration: Music can help integrate sensory experiences, particularly in individuals with sensory processing disorders. Certain types of music, especially those with predictable rhythms and patterns, might help individuals regulate sensory input and promote a sense of calmness.

Memory and Recall: Music can trigger memories and evoke strong emotions associated with past experiences. Therefore, certain songs or melodies can transport individuals back to specific moments, creating a vivid multisensory experience.

Visual Imagery: Music can stimulate the imagination and lead to the creation of mental images. This is often exploited in film scores, where music helps to enhance the visual experience by setting a mood or creating mental associations.

Cross-Modal Effects: Music can interact with other sensory modalities. For example, studies have shown that certain types of music can enhance taste and flavor perception in food and beverages. This phenomenon is known as "sonic seasoning."

Cultural and Personal Influences: Sensory perceptions influenced by music can also be culturally and personally specific. Different cultures associate different sounds with various emotions, events, and situations. Additionally, an individual's experiences and memories tied to music can amplify its impact on sensory sensitivities.

In summary, music's ability to modulate sensory sensitivities is a complex interplay of emotional, cognitive, and physiological factors. It can influence various aspects of human experience, including emotions, attention, pain perception, memory, relaxation, and more. The impact of music on sensory sensitivities can vary widely based on individual preferences, cultural backgrounds, and contextual factors.

3. Music Therapy Approaches for Autistic Individuals

Music therapy has gained recognition as a practical and holistic approach to improving the lives of individuals on the autism spectrum. It leverages the inherent power of music to address various emotional, social, and cognitive challenges faced by autistic individuals. While a wide range of music therapy methods exist, some have emerged as the most widely used and practical approaches for autistic patients.

Nordoff-Robbins Music Therapy: Developed by Paul Nordoff and Clive Robbins, this method emphasizes improvisational music-making to foster communication and emotional expression. Therapists engage in musical interactions with the individual, tailoring the sessions to their unique

needs and preferences. Nordoff-Robbins Music Therapy has been particularly successful in helping non-verbal individuals with autism find a means of expression. [5]

Orff-Schulwerk Approach: This method, based on the educational philosophy of Carl Orff, uses a combination of rhythm, movement, and instruments to engage autistic individuals. It promotes sensory integration, self-expression, and social interaction. The Orff-Schulwerk Approach is especially beneficial for those on the autism spectrum who respond well to structured and repetitive activities.

DIR/Floortime Model: Although not exclusively a music therapy method, the Developmental, Individual-differences, Relationship-based (DIR) model, also known as Floortime, incorporates music therapy techniques. It focuses on building relationships and communication skills through shared musical experiences. DIR/Floortime often involves parents or caregivers and encourages emotional attunement and reciprocity.

MT-PROM: The Music Therapy-Parent-Child Relationship-Based Observational Measure (MT-PROM) is an assessment tool used to evaluate the effectiveness of music therapy interventions for autistic children. Observed parent-child interactions during music therapy sessions and assessed the child's social engagement and emotional responses. MT-PROM helps tailor music therapy sessions to the specific needs of the child and the family.

Responsive Teaching: This approach involves adapting music therapy techniques to meet the individual's immediate needs and preferences. Responsive teaching emphasizes building rapport and trust with the client while using music as a tool for communication. It is highly flexible and can be tailored to suit a wide range of individuals on the autism spectrum.

Sensory Integration Techniques: Many individuals with autism experience sensory sensitivities. Music therapy can help regulate sensory processing through music techniques to provide sensory input and reduce sensory overload. These methods can include rhythm-based activities, body percussion, and listening exercises.

Social Skills Training: Music therapy can improve social skills and communication in autistic individuals. Therapists incorporate group music-making activities to promote cooperation, turn-taking, and interaction. Songwriting and lyric analysis may also explore emotions and social scenarios.

Visual Supports: Visual supports, such as visible schedules and pictorial aids, are often integrated into music therapy sessions for individuals with autism. These supports help create predictability and structure, reducing anxiety and enhancing engagement.

While these are some of the leading music therapy methods for autistic patients, it's essential to note that the effectiveness of each approach can vary depending on the individual's unique needs and preferences. The most widely used methods often combine elements from several of these approaches to create a personalized therapeutic experience. The success of music therapy in improving the lives of individuals with autism underscores its value as a complementary intervention in the comprehensive care and support of autistic individuals and their families.

4. Conclusions

The therapeutic effects of music on individuals with autism have shown remarkable promise in enhancing their emotional, cognitive, and social well-being. Research over the past decades has consistently highlighted how music engages various areas of the brain, often circumventing the challenges posed by the condition. The evidence suggests that piece can serve as a powerful tool to alleviate anxiety, promote communication, and facilitate sensory integration among people with autism. The rhythmic and melodic patterns inherent in music resonate deeply with individuals on the spectrum, providing them with a means of self-expression and a gateway to connect with others in ways that traditional methods might struggle to achieve.

However, despite the considerable strides made in understanding the positive impacts of music therapy for autism, there is a pressing need for further exploration and investigation into its full potential. As we continue to unravel the intricate ways music affects the autistic brain, we open up avenues for tailored interventions that can be personalized to suit the needs of each individual. Additionally, the integration of advanced neuroimaging techniques could shed light on the neural mechanisms underpinning the therapeutic effects of music, paving the way for even more targeted and effective interventions.

Furthermore, collaborations between music therapists, neuroscientists, educators, and caregivers hold the key to harnessing the holistic benefits of music for individuals with autism. By pooling their expertise and insights, we can develop comprehensive programs that harness the therapeutic potential of music and amplify its impact across different dimensions of autism. By investing in rigorous research, designing evidence-based interventions, and promoting accessibility to music-based therapies, we can strive to unlock the untapped potential that music holds as a transformative force in the lives of those with autism.

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