



# Music Therapy for Children with Autism Spectrum Disorders

Julia Koifman\*

Department of Slavic Studies, Atlantic International University, Honolulu, United States

## ABSTRACT

Music Therapy (MT) is a way of helping people with a range of disorders. It involves listening to music, talking about it, and singing, dancing, or making music. MT is a general psychotherapeutic help to people with different disorders. This article researches people with Autism Spectrum Disorder (ASD) and music as a way of treating them. ASD children find it challenging to interact with others, and music, as an ancient form of communication, does not require people to have verbal abilities. Music is the language of art, which goes beyond words and speaks with commonly understood images and emotions, so it can be adapted to meet the needs and tastes of each person. MT is based on music's therapeutic effect on a person's psychological state. ASD is characterized by marked and pervasive deficits in social interaction and communication, limited interests, and repetitive activities. According to the research, it is correct to call autism not a disease or mental retardation but a developmental disorder. Among people with autism, the level of intelligence varies in the same way as among neurotypical people individually. ASD ones need more time and effort to reach their potential because their nervous system is constantly overwhelmed, and music is one of the ways to help them relax.

**Keywords:** Autism; Music therapy; Special education; ASD; Developmental disorders; Neurodiversity

## INTRODUCTION

In autism, scientists often investigate challenges with sensory perception, social communication, rigidity or lack of response to stimuli, and problems with obsessive thoughts and behaviors. Those who study the understanding of music in autism try to understand how people with autism function and develop and learn about their emotional characteristics and aesthetic preferences. By interacting with adults and children with ASD, the therapist helps them gain musical experience, reduce anxiety, and develop new communication skills. It is known that music relieves irritation, sharpens attention, develops memory and speech, and stimulates intellectual development. Music therapy promotes the

formation of new neural connections in the brain. Treating ASD students is complex. It requires various sorts of therapy, and music is one of them. While working with ASD students, establishing contact between each child and the reality surrounding him is the most challenging. Music therapist individually matches the music methods to a particular person's experience and needs and help to establish personal bonds and build trust. If the person does not react, the therapist aims to make the patient respond. Kim claims that music experiences such as music listening, songs, and improvisation can facilitate the process of therapy and help build appropriate relationships between the music therapist and the patient. Thus, therapists treat ASD kids by involving them in such activities as talking about music, listening to

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**Corresponding author:** Julia Koifman, Department of Slavic Studies, Atlantic International University, Honolulu, United States, Tel: 972523781448, E-mail: juliana211269@gmail.com

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music, singing, and dancing. Patients who are gifted and interested in playing musical instruments and even composing music should be given this opportunity [1-5].

## LITERATURE REVIEW

### Signs of Autism

ASD is a sort of neurodiversity and an innate brain developmental disorder. In autism, changes have been noted in many brain areas, but exactly how they develop is unclear. The level of cognitive functions in autism ranges from disability to superintelligence. Thus, ASD might come with other sorts of neurodiversity. Therefore, ASD kids might also have dyslexia, Attention Deficit Hyperactivity Disorder (ADHD), and other Learning Disabilities (LD). As a result, they struggle at school.

Nevertheless, Nelhart claims that ASD often includes giftedness, Asperger's syndrome, and high-functioning autism. Usually, kids with such types of neurodiversity do well at school. Although all ASD children differ, they have many symptoms in common: They are characterized by marked and pervasive deficits in social interaction and communication, as well as limited interests and repetitive behaviors. Moreover, they often have Sensory Processing Disorder (SPD).

The researchers at Mao clinic, claim that the causes of autism are closely related to genetic disorders and probably medications or complications during pregnancy. Moreover, environmental factors, such as air pollutants and viral infections, trigger ASD. Generally, it is not clear what influences the occurrence of autism spectrum disorders more: The environment, interaction of many genes, or rare mutations. Thus, families get a real shock when they find out that a child born to "normal parents" has some of the following symptoms:

- Delays in cognitive, language, and social skills.
- Speech disorder.
- Lack of emotional contact with people.
- Problems with socialization.
- Attacks of aggression.
- Weak interest in toys
- Stereotypical behaviour.
- Fear of change.
- Stress in the family.

Mainly, parents notice some forenamed symptoms when their children are two years old or older. Signs of ASD differ, and no two kids have the same symptoms. Therefore, "depending on where an individual falls on the autism spectrum, children can demonstrate various levels of impairment in the areas of social interaction, stereotyped behaviors, and communication." No matter how symptoms of developmental disorders differ, ASD kids struggle with social interaction, self-expression, and motor skills. They might also have obsessive thoughts and behaviors.

Warren claims that some kids often show anxiety and anger. Perhaps, such a behavior is caused by fear of the outside world, which confuses them and with which they cannot establish communication or find common ground. According to the researchers of Mao clinic some ASD children have mental disorders and low levels of intelligence, while others have high IQ's and study quickly. But most ASD children struggle with adjusting to social situations. Such children do not feel the need to communicate with peers and adults, and even with their family members, and often practice non-verbal communication with the help of mimics and repetitive gestures.

For this reason, it is difficult for them to understand others and integrate into society. Some autistic children cannot express their emotions and stay indifferent to most things. Others express aggressive behavior, tantrums, and self-injury characterizes others. For this reason, it is difficult for them to understand others and integrate into society. Furthermore, they need therapy focused on "teaching cognitive skills and relaxation strategies". Thus, music is one of the ways to develop the forenamed techniques and help them relax [6-9].

Apart from developmental disorders, children and adults with ASD may have a dysfunctional sensory system. "Sensory integration is the system's process of taking in and organizing billions of bits of uncoordinated sensory input." It is a natural process of interpreting and integrating sensory stimulation from the environment. ASD brains receive sensory messages and interpret them differently from neurotypical ones. Some might find sensory inputs overwhelming, and some notice them slower. In both cases, it is SPD. Nevertheless, most ASD people are responsive to music which can be used as a natural "reinforce" for desired.

The research claims that it is still impossible to prevent ASD, but there are effective treatment options. Early recognition of autism signs and diagnosis can help kids improve their behavior, skills of communication, and language development to help a child to integrate into society. The earlier therapy is started, the more chances they have to learn to function well, even if it is impossible to outgrow ASD symptoms. Many modern and effective treatments can help people enhance their academic performance, emotional growth, and even motor control. But MT does much more because it changes the brain, nurtures cognition, and promotes behavioral change.

Some ASD kids may be gifted in many spheres, including music. The study's results indicate that individuals with such neurodiversity may exhibit equal or superior abilities in music, unlike their neurotypical peers. This particular interest may motivate them to do well in it and achieve very high levels of performance. Thus, they may excel in playing musical instruments, composing tunes and songs, and singing, dancing, and performing on the stage. They will likely become professional musicians in the future. Nevertheless, if ASD kids do not show such abilities, music is an effective psychological technique that helps their psychic develop appropriately.

## Why ASD People Need Music Therapy

MT is a therapeutic method at the intersection of psychology, neurophysiology, and musicology. It is a sensory stimulation through music. The basis of this method is music's beneficial effect on a person's psycho-emotional state. MT is used in medical and social institutions, adaptive development centers, rehabilitation programs, correctional facilities, and schools for kids with Special Education Needs (SEN). In Beit Ekshtein, the Israeli chain of SEN schools where I work, MT is mainly used to enhance the students' cognitive performance and motor skills, stimulate their emotional development, and improve their quality of life. It is beneficial for our ASD students.

Since ASD often comes with ADHD, music helps restless children relax and reduce anxiety and hyperactivity. The research claims that listening to a well-chosen musical composition can lower blood pressure, normalize the emotional state, slow down the heartbeat, increase concentration, resolve conflicts and improve the quality of life. By interacting with ASD adults and children, music therapists help correct their behavior, develop new communication skills, and "promote the quality of parent-child relationships". It is known that music relieves irritation, stimulates intellectual development, sharpens attention, and develops memory and speech in children with autism. Moreover, MT promotes the formation of new neural connections in the brain.

If ASD people have problems with speech, MT encourages them to speak. By using songs with specific sounds, music therapists can help promote conversation while enhancing language skills and improving speech development in autistic children. Active singing enables them to sing and recite eloquently, shows examples of rhyming and speech flow, and enhances word pronunciation, which can reduce problems with a monotonous speech in children with autism. As an ESL teacher, I can add that it improves their understanding of the language. Listening to songs or singing related to specific activities can enhance language comprehension and help children learn and understand the meanings of words they have not heard before.

Many ASD people have sensory integration disorders and cannot express their senses. "The blocks are the senses, the sensory systems, skill development, learning, and behavior." Since music unblocks and stimulates them, it addresses sensory issues, focuses attention, and helps redirect self-healing behavior toward socially appropriate behavior. MT also enables ASD kids to recognize their senses and express their feelings and emotions. Apart from relaxing and healing effects, MT may help ASD people improve many skills, including communication, cognition, sensory issues, perceptual and motor skills, and self-determination. As a part of art, music helps them develop musical memory, understand other people's feelings and identify emotions caused by the music, which is versatile. It is a creative medium that allows children to explore safely and spontaneously the magic wand that can heal the soul. So,

choosing the type of music that may suit any person is not difficult. Since many ASD people have difficulties with social interaction, the main aim of music therapy is to help them develop communication skills.

Nevertheless, some ASD people "display enhanced sensitivity to sounds alongside the unimpaired perception of many aspects of music processing, including recognizing basic musical emotions". In this case, their brains process musical information and enable them to reflect the emotions in music. The research claims that people with autism are much better at recognizing anger in music than in other people's facial expressions and voices. Moreover, they often do not recognize anger in themselves. Thus, music is a unique way for people to interact with each other, as it can provide a powerful multi-sensory experience. It allows children to connect with others, experience new forms of relaxation, and promote self-expression. Since music stimulates the senses, it helps them overcome SPD, focus their attention well, and redirect self-healing behavior toward socially appropriate behavior [10-15].

The study results indicate that ASD individuals may exhibit equal or superior abilities in key processing, emotion labeling in music, and musical preference compared to neurotypical peers. Additionally, music is more likely to have a cognitive function for language acquisition. While processing music, both hemispheres of the brain work. Music stimulates cognitive function, emotional responses, and self-expression. It also gives ASD children the ability to move, dance, sing or make noise, which are ways of expressing emotions. So it helps build social skills and relationships. Music therapy can promote two way communication with peers. The most crucial evidence supporting the clinical benefits of MT lies in social-emotional response and communication, such as strengthening compliance, reducing anxiety, developing tones and speech volume, and increasing interaction with peers.

## Methods of Music Therapy for Autistic People

Music therapists often work as part of a group of specialists in various fields, participating in the formation of medical and recreational programs. It is important to note that MT is different from teaching music. So, they select music to activate children's mental and sensory activity and make them believe in the best. "MT has developmental, rehabilitative, medical, and educational applications and can be used to improve the quality of life." Healing music is often used as an additional rehabilitation for ASD children at home, school, and medical settings.

Among the most common methods, MT specialists practice passive and active interventions. Both of them "were designed to reduce physiological stress" during the passive ones, students listen to various sounds and musical fragments. During the active ones, they do exercises, dance, sing together, and play music. While dancing or performing special physical activities, children learn to perceive music and express the received emotions with their bodies. Moreover, they learn to integrate with their peers.

Although some MT sessions are planned for small groups of kids, each music therapist creates a plan for working with each person individually. Establishing personal bonds and building trust is crucial so the person will want to respond. After finding out each individual's strengths, weaknesses, challenges, and needs, music therapists develop a treatment plan with specific goals and objectives and then provide the appropriate treatment. They work with clients individually and in small groups using a variety of musical instruments, styles of music, and techniques. This approach "anticipates that a child who is better able to process, modulate, and integrate sensory information will then be better able to acquire higher order skills."

In both active and passive interventions, therapists use musical instruments and their own voices to respond creatively to the client's sounds and encourage them to create their own musical language. If the goal is to achieve an audio context in which the student is supposed to reduce stress and relax, it is not necessary to use music with words. In this case, the therapist uses pieces of music or styles to suit the mood, clinical needs, and developmental level of the client at the time. It can be medications, medical treatments, and psychotherapy.

But if it is required to help the patient develop speech, enlarge vocabulary, and enhance communication and social interaction skills, the therapist chooses songs with words. They are chosen depending on the general level of the client. "Songs sung by the music therapist are composed or chosen with specific aims like correcting behavior problems, learning signs and words, or building a relationship with the participants." Anyway, the objectives of each session are to help students feel comfortable and confident to express themselves, to experience a broader range of emotions, and to feel what two way communication is. Music as therapy can be used with or without words, depending on the session's aim.

Generally, it is highly recommended to use spontaneous musical improvisation. "In this type of therapy, the child and the therapist play musical instruments expressing rhythms, melodic patterns, and timbre. During the child's musical play, the therapist introduces synchronization and communication with the child by mirroring or complimenting the child's musical expressions. The child is also encouraged to practice imitation." In this case, the child learns to be attentive and practices social interaction and cooperation skills with the therapist and other children. Thus, they develop skills of active speaking.

A good specialist should also be able to develop strategies that can be practiced at home or school. Kim claims that joint improvisation is crucial because it helps to create a good relationship between the therapist and the client, especially at the beginning of therapy. Mutual music making activities encourage the children to participate in the session and create their own music, or at least sing and dance, which develops their movement coordination, senses, speech, and social interaction.

## DISCUSSION

Nevertheless, it must be remembered that something may be a joy for one child, but the same thing may be contraindicated for another. For example, MT should not be used for children with convulsive syndromes or severe excitability. "For some individuals, the senses and sensory systems work well cooperatively to help, seemingly effortlessly, develop and support age appropriate skill development, learning, and behavior. For other individuals, the senses and sensory systems do not work well cooperatively, which may result in developmental delays, learning difficulties, and behavioral problems." Thus, after thoroughly testing each student and learning the medical, psychological, and psychiatric recordings, the music therapist must decide whether this therapy will work. It is also possible to offer the students some sessions which will provide a clear understanding of whether they should attend them or not [16-21].

## CONCLUSION

Autism as a sort of neurodiversity is not a single disorder entity. It is a range of innate developmental disorders known as ASD, such as giftedness, Asperger syndrome, and more. They begin in childhood and last through adulthood. Sometimes ASD is accompanied by problems with speech and self-expression, as well as ADHD, dyslexia, dysgraphia, and other LD. Children with such disorders need a range of therapy, and one of the most effective is MT. Such a therapy uses music as a part of the therapeutic relationship to treat cognitive, physical, psychological, sensory, communicative, and social needs.

There are several examples of methods used to meet the needs of an ASD patient. The process of singing enables ASD patients to communicate with the therapist and other children. Thus, using musical improvisation for a specific therapeutic purpose in an environment that facilitates response and interaction, first with the therapist and then with other patients. In this way, children get skills in communication and cooperation. It is crucial for children who practice non-verbal communication with their mimics and gestures and those with problems with self-expression, pronunciation, and speech.

At the beginning of the MT kids can create their own "language", and themselves through music. At this stage, therapists use simple songs. Later, vocalizing words or sounds in musical tones enlarge vocabulary and enables kids to build sentences. Songs can improve memory and control emotions and behavior. Music therapists use songs as a catalyst to discuss therapeutically relevant issues with the patient. The method includes listening to songs, and analyzing lyrics and their meaning. With school children, therapists can use a method of song writing so that the patient will be able to explore inner thoughts, feelings, or problems. Songs can also be written as an overview of life.

Music is a universal language that allows a child with ASD to communicate with the world around them. Music

is multifaceted. It can soothe interest, excite, and evoke diverse emotions. Therefore, therapists must be aware of the possible effects of music on their patients and use it thoroughly for each session. Besides, for some children, this way of treatment might not be suitable. Therefore, the therapist must study each new patient's case.

MT is a unique opportunity to restore a child's communicative, behavioral, speech, and mental skills, provided that it is used as a link in a more voluminous complex treatment. It also has beneficial effects on cognitive, motor-functional, and socio-emotional functions. Moreover, it stimulates neuron connections and enhances brain activity.

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