

DOI: 10.7596/taksad.v9i3.2823

Citation: Khyzhna, O., & Shafranska, K. (2020). Music Therapy as an Important Element in Shaping Communication Competences in Children with Autism Spectrum Disorder. *Journal of History Culture and Art Research*, 9(3), 106-114. doi:<http://dx.doi.org/10.7596/taksad.v9i3.2823>

Music Therapy as an Important Element in Shaping Communication Competences in Children with Autism Spectrum Disorder

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Abstract

The article concerns the problem of improving the communication of high-functioning children with autism spectrum disorder using music therapy methods. While we are witnessing the progress of research work on the language capabilities of these people, knowledge about their communication is still not sufficient. It is common ground that communication at both the language and non-language level is disturbed in these children. Music therapy can have a very positive effect on people with ASD, due to its calming and relaxing but also activating effects, depending on the type of music used. Considering the often occurring auditory hypersensitivity in these people, one should carefully select the musical material and gradually accustom them to this type of therapy, starting with sound habituation and passive music therapy. It is difficult not to notice similarities that combine music therapy with other methods that support multimodal development of children such as the Good Start Method, some elements of drama using elements of rhythm, movement and sound, logorythmics. The variety of therapeutic methods allows selection of the one that is most appropriate for a given person. Music therapy classes can have a positive impact on the psychomotor development process of a child with ASD.

Keywords: Autism spectrum disorder (ASD), Asperger syndrome, music therapy, communication.

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Introduction

It has been over 70 years since Leo Kanner and Hans Asperger highlighted specific behaviors of people with autism spectrum disorder (ASD). During this time, medicine has reported great progress, but the autism spectrum still remains a mystery. The research conducted so far (Bailey, 1969; Pisula, 2002) has focused on such causes as: genetic disorders, complications during pregnancy and childbirth, and environmental conditions.

Researches indicate an increase in the number of diagnosed cases of autistic disorders. The rates given for ASD range between 2 and 7 per 1,000 people (Charman, 2004). Despite efforts of doctors, therapists, NGOs, and social organizations to improve the functioning of these people and their families - the effects are still limited. Specialists in medicine, psychology, pedagogy, speech therapy, and many other fields deal with the development of therapy methods to choose the most suitable type for each person with ASD. In the US, children with ASD most often start therapy after the age of 3. Despite this, American doctors believe that the diagnosis is made too late. In Poland and Ukraine, children with ASD usually go to specialists when they fail in kindergarten or school, i.e. at the age of 5-6. It is extremely rare to diagnose Asperger Syndrome before the child reaches 5 years of age. The diagnosis is based on careful and thorough observation of the child in various situations and conditions. The diagnostic process may take up to several months if there are reasonable doubts and the case is unusual. An additional difficulty is the fact that each symptom may occur in varying degrees and compilation with another disorder. No biological, genetic, or behavioral marker has been found so far, so the diagnosis is based on the statement of occurrence of a sufficient number of symptoms. The effectiveness of therapy for children with ASD is determined by the early start of actions and individual approach. The stimulation of these children's development must be multidirectional and cover various areas of the child's functioning.

This article concerns the issue of improving the communication of high-functioning children with an autism spectrum by using music therapy methods. While we are witnessing the progress of research work on the language capabilities of these people, knowledge about their communication is still not sufficient. It is common ground that communication at both the language and non-language level is disturbed in these children. These disorders may be different and severity. An additional difficulty is the fact that children with the autism spectrum significantly differ from one another in terms of communication development. Some function at a satisfactory level in terms of language, but further development of their communication skills may require stimulation. Others have not mastered language skills sufficiently. Most children with Asperger syndrome have difficulty using elements of non-verbal communication. Communication efficiency serves socialization, cognitive and emotional development of the child, and enables him to expand the area of experience and thus understand the world and people. Oksana Andreiko et al. (2019) state that

Artistic and pedagogical process create conditions for the person to incarnate him/herself: his/her outlook, thoughts, feelings and their understanding. If this process has caused the student to

respond emotionally, his imagination is involved, the mechanisms of identification, interiorization, reflection, comparison and juxtaposition are "turned on", and the educational activity is based on the "zone of proximal development", then such a process creates real conditions for developing a personal relationship to the world, to other people, to oneself (p.97).

All the irregularities that we notice in the development of children with Asperger syndrome make us reflect upon which methods can be used to improve their functioning. Art therapy, and in particular music therapy and drama can be an effective tool in developing communication skills in children with Asperger syndrome. The basic assumption of this article is based on the belief that autism spectrum disorders are dynamic, subject to developmental changes, and the severity of symptoms can be reduced using revalidation interactions. Children with Asperger syndrome must make a huge effort to meet the demands of mass school. That is why it is so important to support their development, understanding, and kindness of educators. Tolerance and shaping positive attitudes among peers play a huge role. It is important to notice and develop special skills or talents of a child with ASD and help in mastering the principles of communication or social functioning. A wise, friendly educator can significantly contribute to the educational success of a child with ASD. People with Asperger syndrome study at the science faculties of many universities, and some of them later take up scientific work. Probably in adult life, they will still struggle with many problems resulting from this disorder but they can gain independence, work, and sometimes even create satisfying relationships.

Selected aspects of music therapy in the light of Leonard B. Meyer's theory

The first concepts of the theoretical approach to music therapy appeared in the fifties of the last century, however, if we look at these definitions we will notice that most of them do not meet the requirements of sufficiency and completeness. Tadeusz Natanson (1992), head of the Wrocław Institute for many years and then the Institute of Music Therapy, a professor of exceptional merit for this discipline (especially its theoretical and critical current) defines it as: "a method of conduct that multilaterally uses versatile impact of music on human psychosomatic system". A slightly different approach is presented by researchers that treat the phenomenon of music therapy from the perspective of human sciences and medicine. Jan Wierszyłowski, author of fundamental works in the field of music psychology, discussing the psychological basis of the perception of a musical work says: "music evokes a certain feeling, but the subjective state of the listener is of great importance in perception. The type of response to a musical work heard depends, on the one hand, on musical stimuli, on the other hand, on the listener's mental structure and extra-musical associations. In addition, on the perceptual type that he represents, current mental state and cultural habits" (1981, p.225). In another place of this work, we read: "experimental data and music therapy practice show that music can change the activity of the nervous system, cause specific changes in the activities of the whole organism, can change muscle tone, accelerate metabolism, change the blood circulation rate, lower the sense sensitivity threshold senses, affect internal secretion, pulse strength and speed, modify breathing, etc.", "acting as a kind of medicine" (Wierszyłowski, 1981).

Kinga Lewandowska (1996) believes that music therapy is: "one of the forms of psychotherapeutic and physiotherapeutic interaction that has a healing effect not only the psyche but

also the whole human body". It can have a positive effect on the child's psyche but also, as a physiotherapeutic method, regulates the activity of the nervous system, reduces the degree of muscle tone, lowers the threshold of sensitivity of the senses, modifies breathing. Analyzing the concepts found in the literature on the subject, Tadeusz Natanson (1992) formulates goals of therapy using music (music therapy) as follows:

- excitation and control of desired emotions (affective attacks, moods),
- relaxing effect (calming psychomotor excitation and emotional and muscular tension),
- positive effect on well-being,
- stimulating readiness to contact and developing interpersonal communication,
- shaping a creative attitude through aesthetic experiences.

Kinga Lewandowska (1996) divides music therapy into receptive and active music therapy. The first one includes listening to music, analyzing feelings, and sharing them with the group, the second one - active play of music, instrumental, movement and vocal improvisations. Classes can be conducted individually or in a group of several people, depending on the diagnosis, symptoms, and purpose of therapy. Currently, music therapy is also used in neuropsychiatry: "in developmental delays, in people with brain damage, in autism, in behavioral disorders, in neuroses" and in general in prevention in pediatrics.

There are attempts of sociological approaches in the literature on the subject says: "music therapy is a multisensory therapy and musical means such as phonetic-rhythmic speech, free and orderly rhythm, movement, melody of speech and singing and hand-held instruments are used to suit all the senses. In spontaneous and creative cooperation, a child can and should freely formulate his way of expressing himself and use this in social relations" (Klöppel & Villex, 1995, p.45). This approach brings us closer to the subject of speech therapy, which is after all a science of communication, as well as to sociolinguistic theories. The use of phonetic and rhythmic properties of speech as well as its melody (voice intonation, running a phrase in sentences) as elements of music therapy serves the development of communication skills and, consequently, socialization. However, no scientific theory about music therapy answers the question: what causes that certain types of music can positively affect specific diseases or disorders? In an attempt to answer this question, the theory of Leonard B. Meyer (1974), almost forgotten today, formulated in the work "Emotion and Meaning in Music" may be helpful. Meyer combined several areas in his work, for he was both an educated and creative composer, philosopher and cultural scholar as well as a theorizing musicologist. Probably just such a combination of interests and synergy of theory with practice enabled him to examine and formulate several cardinal principles of the essence and nature of musical experience. The key to a new look at the problem in this case turned out to be the communication aspect of music, usually overlooked in the first, classic period of formulating theories explaining the mechanisms of music therapy. It is worth remembering that while the majority of researchers dealing with the subject of music impact on the recipient unanimously accept the possibility of transmitting various meanings through music in the

process of perception and reception, but there is no unanimity at the stage of preliminary refinements. Some researchers claim that musical meanings are enclosed within the musical work itself (absolutists) while others (referentialists) are of the opinion that these meanings arise rather in the relationship between the musical work and the "non-musical" world and thus the world of concepts (including language concepts), activities or emotional states of the recipient. There are also researchers who believe that internal and contextual meanings are not mutually exclusive and can harmoniously complement each other. This dispute leads to one conclusion: the theory and practice of different cultures, over the course of historical eras, confirms the possibility of "communicating" referential meanings, resulting from the relationship between the musical work and the recipient and cultural contexts in the broad sense of the term, through music. One of the proofs of this relationship are various "musical cosmologies," e.g. Hindu or Arabic ones, in the codified systems of which: tempo, pitch of the sound, rhythms, distribution of accentuation, timbre, nature of the instrumentation, as well as melorythmic sequences defined and respected by performers refer to specific concepts, feelings, moral and religious values. Similarly, although in a slightly different way, this happened in the musical "cosmologies" of Western countries, where the system of symbolic meanings refers to emotions, character traits, or phenomena occurring in nature. In both cases, we notice a certain type of cultural code, of a conventional nature, which attributes non-musical meanings to specific elements contained within a musical work on the basis accepted in a given cultural circle.

Meyer (1974) says that there is a definition of musicality that does not refer to abilities commonly used as musicality parameters (such as: musical hearing, sense of rhythm, musical sensitivity), which emphasizes mainly the ability to understand musical form. The recipient expects the expected solutions and elements of meanings accepted in the given "system". If one could find a way to relate this expectation existing in the mental sphere to measurable and objective parameters such as the physiological responses of the body, one could examine the impact of these meanings on the emotional sphere of the listener on the basis of a psychological theory of emotions. However, if we assume that these processes can be interpreted in the light of contemporary dominant communication theories, which emphasize reactivity, perhaps we could find the key to a specific interpretation of the therapeutic possibilities of music.

Music therapy in the therapy of children with autism spectrum

Interactive sensory systems include tactile, vestibular, localization, visual and auditory information processing, i.e. an area in which musical interventions can affect the persistence of functional adaptation of children with autism spectrum (ASD). The role of psychological knowledge in music therapy is extremely important as it enables conducting classes with a child with autism spectrum (Berger, 2002). Sensory integration and functional adaptation should be the main goals of music therapy, which will undoubtedly affect the overall well-being of people with ASD. It is also important to use various forms of music therapy, including logorythmics, dance and movement therapy, due to specific speech-therapy problems associated with elements of speech, lack of motor coordination and non-verbal communication disorders. Contact skills, socialization and emotional, psychological and cognitive development are anticipated as a result of body comfort, better

coordination, better sensory integration, interpersonal communication, and greater self-confidence (Wigram, 1999). To understand the essence of music therapy, we must know that it arranges joint musical experience of the child and the person conducting the classes. This experience has a positive effect on relationships with both the group and the therapist. Participants should have a sense of security and trust, then it is possible to try to express music in different ways (by movement, vocally, through playing instruments) without requiring skills or experience in this field, which will positively affect motivations in making attempts and, as a result, develop self-confidence and increase self-esteem. The therapist's role is to create a musical framework (Wigram, 1999) within which the child can function, and to create a relationship in which his development will be possible. The music therapist's way of work oscillates from a highly structured framework to flexibility and freedom.

When working with people with multiple disorders or behavioral disorders, multisensory music therapy is used, which utilizes such means as: phonetic-rhythmic speech, free and orderly rhythm, movement, playing instruments (Galińska, 1981). Another form of music therapy is a technique proposed by E.Hillman Boxill, which treats music as "a tool to stimulate, increase and expand consciousness aimed at getting to know oneself" as well as other people and the environment. He proposes three strategies he has created: reflection (musical mirror), identification, and song of mutual contact. Calming music, frequently used in passive music therapy, should reduce tension and have a relaxing effect. Classical music used for this purpose should, according to Elżbieta Galińska (1981), be characterized by:

- short duration (a maximum of 10 minutes),
- slow or moderate tempo,
- low volume and no dynamic contrasts,
- fluency of melody and rhythm, a predominance of regular and swaying rhythms,
- a significant level of structuring and regularity,
- predominance of the middle sound register,
- lack of instruments with bright and sharp timbre and avoiding vocal compositions,
- presence of slight climaxes, creating conditions for oscillating between the state of tension and relaxation.

Activating music recommended for working with children with ASD, due to their communication problems, should be characterized by (Schwabe, 1972):

- fast pace,
- a large variety of melodic and rhythmic course,
- a large diversity of dynamics,
- contrasting melody of opposing themes according to the principle of the classical sonata,

- opposition of various groups of instruments.

Music therapy can have a very positive effect on people with ASD, due to its calming and relaxing but also activating effects, depending on the type of music used. Considering the often occurring auditory hypersensitivity in these people, one should carefully select the musical material and gradually accustom them to this type of therapy, starting with sound habituation and passive music therapy. It is difficult not to notice similarities between music therapy and other methods that support multimodal development of children such as the Good Start Method, some elements of drama that use elements of rhythm, movement and sound, logorhythmics. The variety of therapeutic methods allows the selection of the one that is most appropriate for a given individual.

Music therapy classes can have a positive impact on the process of psychomotor development of a child with ASD. Vocal exercises develop breathing, phonative and articulatory skills, have a positive effect on improving their coordination. Exercises that aim at the perception of music elements have a positive effect on speech prosody (intonation, accent, rhythm, and tempo of speech). They facilitate the speech therapist's work on conducting intonation and phrase in various types of sentences (declarative, interrogative, negative sentences). The musical rhythm is an ordering element (predictable, repetitive) and thanks to this it can be a factor that builds a sense of security during classes. Children with the autism spectrum, including Asperger syndrome, often perform rhythmic stereotypical movements to release tension. The rhythmic factor can positively affect their sense of control and composure. The need for movement compliance with music is a phenomenon that makes even children who tend to move involuntarily, hyperactive children make enormous efforts, often successful, to reduce unnecessary movements so as to faithfully reproduce the rhythm of the music or the choreography. They learn to control their bodies.

Music is a stimulus for movement and is its inspiration. Movement, on the other hand, should be a consequence of music and the emotional state caused by it.

While playing instruments, children learn ways to bring out the sound, repeat musical patterns, e.g. the therapist plays an instrument and awaits a response of the child also playing the instrument, which teaches him the alternation of action necessary in communication (dialogue). It also serves to remember patterns, while creating the possibility of their modification, which allows the child to get used to changes.

Conclusions

1. Music therapy affects (Błeszyński, 2005) the development of speech and communication capabilities of children with the autism spectrum and reduces the occurrence of echolalia. Sensory experiences are also beneficial for their development - feeling and listening to the sound brought out, comparing the energy involved in creating the sound (sound dynamics). Vocal improvisations, imitation of sounds, or singing songs release spontaneity but also is utilized for articulation purposes. Relaxing music reduces tension and anxiety.

2. Attractiveness of music therapy is its great advantage. Many researchers (Blackstock, 1978) drew attention to the interest of children with autism spectrum in music and its performance. Blackstock compared musical preferences of autistic children and children in developmental norm, showing that autistic children clearly prefer musical (auditory) stimulation as opposed to children in developmental norm. Movement exercises with music help to improve motor skills and shape the awareness of one's body. Due to the form of group fun, they teach cooperation and help to develop social skills.

3. The choice of music therapy techniques and musical material depends on the age of the children and the goals the therapist assumes - relief of tension, change of mood, help in establishing contacts, etc. The repertoire of musical works should be adapted to the children's musical interests and preferences.

4. Prepared for educational activities specialist has such a significant professional and personal qualities and characteristics:

- Awareness of the meaning, significance and purpose of social and educational activities in the context of the educational problems of art education in a multicultural society;

- Sensible, mature teaching position;

- Cultural tolerance;

- Ability to formulate new educational task and achieve optimal rethink them during training;

- The ability to build a coherent educational program that takes into account the individual attention to students, educational standards, the new educational guidelines;

- Correlation of the reality with the requirements of individually oriented education, corrections of education process according to the criteria of innovation;

- Ability to see each individual abilities and teach according to their features;

- Ability to organize training and education to ensure that students creating their results and using innovative educational technology to stimulate their development;

- Knowledge of technology, forms and methods of educational activities that provide skills based on personal experience and motivation of students to be co-creator of the purpose of their activities, to be competent tutor, consultant and assistant in correlation with outcome goals, using available student reflection and self-evaluation forms;

- Ability to see and encourage discoveries and cultural expressions of pupils;

- Ability to analyze changes in the educational activities, the development of personal qualities of pupils;

- Ability for personal development, reflexive activity, awareness of significance, urgency of their own research and discovery.

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