

The Effectiveness of Music Therapy in Improving Communication Behavior in Autistic Children

Rolina Albadawi

rolina@aut.edu.jo

Aqaba University of Technology

Abstract

This research aims to determine the effectiveness of music therapy in improving the communication behavior of autistic children in order to demonstrate the necessity of developing special musical programs to know the effect of music in improving the communication behavior of children with autism. The lack of communication skills in children with autism may be the strongest reason for the occurrence of Disorder, unhappiness, and lack of understanding of oneself or others. The inability to communicate is a major cause of isolation, refusal to interact with others, and loneliness, which may lead to depression.

Lack of communication may lead to weak family relationships, a lack of friends, and may lead to the individual feeling frustrated, depressed, and perhaps helpless. Autistic children need occupational therapy, speech therapy, group play training, etc., they also need music therapy to improve their communication skills

. The goal of all these treatments is to bring the autistic child to the point where he can adapt to his condition and communicate better

With others

, teach him something that he can practice in the future.

The researcher noticed a lack of interest in music programs for children with autism research on behavioral disorder (autism) and its symptoms, and after multiple visits to a number of centers concerned with this disease inside and outside Jordan.

The researcher noted that centers outside Jordan use music to treat and entertain children, while music and musical programs are a little

in Jordan. Which prompted the researcher to conduct this study by using music as therapeutic classes for autistic children in order to identify the effectiveness of music therapy in improving communication behavior among autistic children. Find out how music classes affect children's behavior

And learn the opinions of teachers and educators of Autistic children

By distributing a number of questionnaires and conducting statistical analysis

At the end of the research, the researcher concluded a set of conclusions and recommendations, the most important of which are:

- Music helps children with autism improve their mood

- Music helps children with autism disorder communicate better with everyone around them, whether children, teachers or educators.
- Music always makes children with autism feel comfortable, refreshed and active

Music that includes rhythmic instruments trains the ear to hear the correct rhythm, which gives the child internal balance and organization of his thoughts and thus affects his personality

It was shown through this research that there is an effect of music therapy programs in improving the communication behavior of autistic children

Keywords:

Autism Spectrum Disorder:

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM V, 2013), defines autism spectrum disorder as a neurodevelopmental disorder characterized by deficits in two main dimensions: (a) deficits in communication and social interaction. (b) Limited in scope to the number of behavioral marketing companies and iterations. It includes three levels, with the onset or appearance of symptoms occurring during early childhood (age 8 years) due to poor performance and athleticism. (American Psychiatric Association, 2013,p.809)

Verbal communications:

Using speech as linguistic symbols to express needs, ideas, and feelings between people. (Al-Qaryouti, Al-Sartawi, Al-Sammadi, 2012, 419)

Music Therapy

Music therapy is known as a health treatment based on interaction with music in order to achieve specific goals in a training program based primarily on music, depending on its components and its importance to humans. With the aim of improving the individual's life and achieving a number of positive changes in his various behaviors. (American Music Therapy Association. 2002)

Training Program

The training program is defined as a planned and organized process that aims to bring about a specific change in a situation or situation for an individual or group. It includes a group of sessions that contain many techniques that are presented individually or collectively and help bring about mental, social, emotional, and professional growth. And the academic It is an integrated unit applied to learners' activities and has proven its effectiveness(Aber, Brown1996)

Introduction:

Music has been linked to beliefs throughout the ages

. The Pharaohs linked music to and prohibited its use by the common people

. They forbade dancing rhythms and cheerful melodies that distract the soul from worship. They also forbade loud instruments such as wind instruments, whose sounds were considered to lack dignity and chastity. Soft instruments were used, and music education was limited to the children of kings, rulers, priests

Greek civilization

Has a major role for music therapy, because the Greeks considered music necessary to maintain the health of the mind and body, believing that it worked to heal functional and organic diseases.

Because children with autism disorder lack communication and social interaction skills, which leads to poor growth in their current and future relationships. An autistic child may be rejected by others because he cannot express himself or communicate what he wants to say or do to others in simple, normal ways like other children, due to weakness

His communication skills. Because these children suffer from a lack of attention and concentration when receiving messages from others.

Music has an impact in helping autistic children focus, communicate, and establish relationships with those around them, because music can be used to help in teaching, self-regulation, and preparation for communication, improving relationships with others, and increasing rates of growth and learning. A child with autism disorder can feel the sense of rhythm and music in the early stages of life. An autistic child needs To learn some form of adaptation or behavior modification so that he grows It also helps him accept his reality and adapt to it. It is very important for an autistic child to overcome his disability and disorders and learn how to coexist and adapt to it in this world

Research Problem:

Based on what was mentioned about the influence of music

Given the importance of music in achieving the child's integrated psychological development, and through the researcher's experience in the field of music therapy, through research into behavior disorder (autism)

The researcher's knowledge of autism and its symptoms after multiple visits to a number of centers concerned with this disease inside and outside Jordan

. The researcher noted that centers outside Jordan use music to treat and entertain children, while music and musical programs are absent from centers in Jordan. This is

what prompted the researcher to conduct this research to determine the effectiveness of music therapy in improving communication behavior in autistic children

Research Importance

The importance of the research is demonstrated by demonstrating the impact of music in improving communication behavior in autistic children and presenting solutions and proposals to decision-makers to solve the problem of lack of communication in autistic children.

Research Objective

The research aimed to test the effectiveness of music therapy in improving communication behavior in autistic children, and a therapeutic music program was designed to determine the effect of music in improving communication behavior in children with autism.

Research Questions

- Does music have a role in improving communication behavior in children with autism disorder?
- Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) between the opinions of teachers and educators of autistic children, whether specialists or non-specialists, regarding the role of music in improving communication behavior

among children with autism disorder, due to the following variables: gender, experience, and specialization?

Theoretical frame work and studies

Communication

Connection

Definition of communication

It is the association of two or more people through verbal or non-verbal behavior in order to interact with each other for a period of time. People are linked to the communication process for several reasons, including:

- Self-understanding.
- Knowing others.
- Understanding the environment.
- The need to satisfy social needs.
- Increase positive experiences (Imran, Mona Ahmed Mustafa ,2014)

People have three basic human needs that are satisfied only through communication with others. These needs are:

- The need for the individual to be part of a group: to engage in communication with others
- The need for love: to love others and be loved by them

- The need for control: influence on others, the environment, and the self

Lack of communication skills may be the strongest cause of disorder, unhappiness, and lack of understanding of oneself or others. The inability to communicate is considered a major cause of isolation, lack of interaction with others, and loneliness, which may especially lead to depression. Lack of communication may lead to weak family relationships, a lack of friends, and may lead to the individual feeling frustrated, depressed, and perhaps helpless.

Believing that the language of music is a universal language with its own and rich vocabulary that qualifies it to be a language that teaches communication skills, whether through the use of melodies or rhythm, time, technique, and singing through which we can convey any message we want to convey, musical activities help improve the process of communication. Pronunciation, pronunciation, quality and range of voice.

Sensory perception of sounds in the environment is a necessary skill for language formation. The music therapist uses a song appropriate for the age of the child and emphasizes the words that he knows are important and will help him reach his goal during music therapy, especially if the child has some simple speech skills. Many children resort to The process of imitation: They watch the coach's lips to do the same (Music Therapy and individual with diagnoses on autism spectrum. 1-4.2002)

An overview of the history and development of music therapy

For the Greeks, music was linked to the soul, and the word music originally came from the word) Museums) , which means the gods of the arts. The Greeks considered that each of the arts had its own god, and that god was called Musa and the group of gods Musas, hence the name Museums, which was given to all the arts together. Then the word became known as music, meaning music.

As for Islamic civilization, great doctors such as Al-Razi and Ibn Sina were interested in music and used it in hospitals. They have many writings on the subject of music therapy that we find in the history of Arab medicine. The Arabs used and still use the word “tarab” and this word means the ability of music to move the human soul, whether with joy or sadness, and the musician needs great effort to have the ability to cheer the soul.

Music developed alongside science and became an independent science due to the presence of Arabic philosophy, which Al-Farabi promoted. He was skilled in all sciences and music, and he created effective melodies that stirred emotions.

Music witnessed a golden period in the Abbasid era. The Arab scholar Ibn Sina wrote a book called “The Canon,” which is considered an important medical reference. In this book, he compares the heartbeat and the musical scale.

Music and therapy in the twentieth century.

In 1924, Orff and Jones founded a school called “Günter Schule” in Munich/Germany, which taught rhythms, dance, and music. The school was built on the belief: since children learn to speak before they learn to write and read, they must have a musical language they are comfortable with before they begin studying music. This school did not survive World War II.

In the twentieth century, during World War I and World War II, music was used to help treat the nervous shocks suffered by warriors. In the 1940s, music therapists were trained in some American universities, such as the University of Michigan, the University of Kansas, and the College of Music in Chicago. And College of the Pacific.

In 1940, the music therapy practice certificate was established in America.

In 1950, the first music therapy conference was held in Washington by the National Foundation for Music Therapy.

In 1964, the first music therapy journal was published.

As for the American Therapists Guild, it was established in 1971. Since 1980, the music therapy profession has begun to grow and develop.

In 1997, the American Music Therapy Association published some definitions about the music therapy profession to increase awareness of this profession.

The relationship of music to autism

Music helps the autistic child build social relationships and improve his communication skills. Some autistic children have the ability to understand and comprehend language even though they do not speak sometimes, and the role of music therapy comes in order to teach them the stage Moving or switching to speech, knowing that in the language of music they do not face the linguistic difficulties that constitute a barrier for them in speech. Studies have shown that autistic children do not usually respond to any address with an emotional appearance, but in return they show emotional responses to music. This is because the language of music is able to deal with all levels of intelligence that may be present in autistic children, because it is considered exciting for them and can attract their attention.

Improvised music increases the communicative behavior of the autistic child, as it allows him control and control. This is because in improvised music the child expresses himself without any restrictions due to his lack of commitment to singing a specific melody, so the child starts off with his voice and creates his own melodies, which increases his self-confidence. He expresses his emotions properly, and since the improvised music will be performed only by the child, this will gain him self-confidence and he will be in control of the group while performing the improvised melodies, and he will control those melodies however he wants.

To a musical dialogue between him and the instrument or music.

Music therapy provides the autistic child with an effective way to discover his abilities and creativity through non-verbal self-expression, in addition to giving him great inner joy whose signs appear externally, such as smiling, laughter, and positive emotion (Cheryl, O& Pamela, S.W. (2011))

Modified music: It is one of the ways of using music to treat an autistic child, and it is based on several types of tones and instruments. While the child listens to these instruments, the therapist monitors and records the child's reaction and responsiveness. Based on his notes, the therapist adjusts the music so that it matches the pitch, intensity, melody, rhythm, and instrument that the autistic child responded to

The goal of using music in this way is to make music therapy sessions enjoyable for the autistic child, in addition to the possibility of using them purposefully and educationally by creating a positive atmosphere that prepares the child to develop his means of communication and facilitate his transition to new educational stages.

Music is a useful activity in therapy, especially for children, because it makes them feel fun, playful, and relaxed more than other treatment methods. It helps them relax, relieve anxiety and tension, breaks down the barriers that lead them to isolation, and encourages them to communicate with others in one way or another.

It was noted that music therapy reduces stereotyped movement, facilitates the communication process and helps them find a comprehensive linguistic alternative to speech by expressing themselves by playing or singing.

When happy, he plays or sings a certain melody, and when sad, he plays or sings another melody. This will make it easier for the child to express himself through speech.

. Music affects their self-acceptance, provides them with a sense of individuality, and gives them positive motivation because it establishes communication with them, extracts speech, and reduces their pathological behavior. Because of the individual differences among the autistic community, there are no rules or laws that can be applied during music therapy. Music is almost an effective tool in treatment. For example: - It breaks the barriers of isolation because it provides alternative relationships. However, it may be harmful at times because it creates several contradictions when working with autistic people because it may push them into mania and promote their withdrawal

Therefore, the music therapist must be a person specialized in this field and knowledgeable of all aspects, especially when dealing with autistic people. Certainly, music does not cure the autistic person the way medicine cures inflammation or an illness, but music has its own impact on the life of the autistic person and his family, and it can be considered An integral part of autism treatment processes. It teaches him

communication skills and helps him develop language skills, if any. It also enhances his positive attitudes by enhancing his self-confidence and forms a basis for learning. (Imran, Mona, 2014

Autism spectrum disorder (ASD) in children is characterized by difficulties in social communication and restricted repetitive behavior patterns. Music therapy appears to have beneficial effects in the area of social interaction and communication (Tsirigoti, Athina, and Maria Georgiadi. 2024).

Research has shown that autistic individuals often have unusually good musical skills and that combining words and music helps autistic individuals to focus on spoken words. This study tests the idea that music will help with early language learning of preschool autistic children. The results show that when caregivers sing words to autistic children, the children pay more attention to the caregiver than when the words are spoken and that they learn word combinations more easily.

(Williams, T. I., Loucas, T., Sin, J., Jeremic, M., Meyer, S., Boseley, S., Fincham-Majumdar, S., Aslett, G., Renshaw, R., & Liu, F. (2024).

Previous studies:

Bassi Hanaa (2016) conducted a master's study entitled Parental treatment methods for children with autism disorder at Kasdi Merbah University, Algeria.

This study aimed to devise special methods in dealing with children with autism disorder in order to facilitate the process of communication for them with their peers.

This study concluded by adopting a number of methods in dealing with children with autism disorder.

This study intersects with our current research in that it focused on the category of children with autism disorder

It has devised several ways to deal with children and facilitate the communication process for them

This study differs from our current research in that it focused on parental treatment methods for children with autism disorder

She did not mention music therapy

Nafisa Trad (2013) conducted a master's study entitled

The effectiveness of a training program in improving social skills among a sample of autistic children

At Kasdi Merbah University, Algeria

This study aimed to improve the social skills of a sample of autistic children

By designing a training program

It was concluded that the training program that was proposed was effective, in which many special methods were used to improve the social skills of a sample of autistic children

This study intersects with our current research in that it focused on the category of children with autism disorder

She created a training program to deal with children and facilitate their communication process

This study differs from our current research in that

She did not mention music therapy

Conducted by Magdy Fathi Ghazal 2007 A study entitled “The effectiveness of a training program in developing social skills among a sample of autistic children” in the city of Amman. Master’s thesis from the University of Jordan

This study aimed to improve the social skills of a sample of autistic children

By designing a training program

It was concluded that the training program that was proposed was effective, in which many special methods were used to improve the social skills of a sample of autistic children.

This study intersects with our current research in that it focused on the category of children with autism disorder

She created a training program to deal with children and facilitate their communication process

This study differs from our current research in that

She did not mention music therapy

Method and Procedures

Introduction:

This part of the research covers a detailed description of the research methodology, the research community and its sample, the research tool used and the method of preparing it, and the procedures for validity and reliability of the tool used. It also includes research variables and methods of statistical processing of the data collected by the researcher, which will help her in presenting, analyzing and discussing the results.

- Research Methodology:

Here, the researcher used the (descriptive - analytical) approach to suit the research purposes, in addition to the statistical treatment of the research variables and the statement of the research results and recommendations. The researcher also collected the data and information necessary to conduct the research, after which the appropriate data and data were analyzed and the results were drawn. (Morsi, 1986, p. 96).

The treatment program consisted of twelve sessions, two sessions each week for one child, for a period of six weeks. The children were exposed to listening to classical music and their favorite songs. The songs were characterized by their ease, slowness. The music was accompanied by other activities, such as singing, dancing, and playing, with the aim of integrating the senses of hearing, touch, and sight, in addition to movement. The simple melody, easy rhythm, and repetition achieve the desired goal of these behavioral therapy sessions.

At the beginning of the lessons, the children were introduced to some percussion musical instruments, such as:

- Darbuka Bango
- Double Drum Bongos
- Triangle
- Maracas poppies
- Tambourine
- And the xylophone
- Wooden clappers
- Tar

Exposing children to listening to classical music and their favorite songs. The music was accompanied by other accompanying activities such as:

Singing/dancing/playing

This aims to integrate the senses of hearing, touch, sight, and movement

Two music classes were given each week to one child for six weeks.

Research population:

The research **population** consists of teachers and parents of the children in the research sample from the Jordanian Center in the State of Jordan

Research Sample:

The research sample is determined by those who answered the opinion poll questionnaire questions, and their number is randomly selected:

15 teachers accompanying an autistic child from the Jordanian Autism Center in Jordan

15 child educators from the Jordanian Specialized Center for Autism in the State of Jordan

- Description of the characteristics of the research sample

A group of factors related to personal and job matters (Factual Data) was chosen in order to explain some facts related to the research sample.

3-5- Research variables:

In this research, the researcher addressed the following variables:

Gender, specialty and experience.

Characteristics of the research sample:

The frequencies and percentages were extracted to describe the sample answers in the paragraphs below:

(1) Gender:

Table (1)

Distribution of the research sample according to gender

ratio	frequency	
%66.7	20	Male
%33.3	10	Female
%100	30	Total

We note that 66.7% of the sample are male and the rest are female.

The largest number of teachers accompanying an autistic child, the research sample, is from the Jordanian Center for Autism in Jordan

The highest percentage of males and the lowest percentage of females. This is because most of the children in the research sample were male, and thus the number of teachers accompanying them was male and the lowest percentage was female. It is a sample that is completely representative of the research community, as the largest number and

percentage of the research community are male, and the number of females is naturally smaller, and therefore the results that we will obtain from this research will be real results because the sample was completely representative of the research community.

(2) Field of specialization:

Table (2)

Distribution of the research sample according to specialization

ratio	frequency	
%23.3	7	Non-specialized in treating autism
%76.7	23	Specialists in treating autism
%100	30	Total

We note that 76.7% of the sample specializes in treating autism, and the rest do not specialize in treating autism. It is a completely representative sample of the research community, as the largest number and percentage of the research community are teachers who specialize in treating autism.

Of course, 23.3% of non-specialists in treating autism are less in number, and therefore the results that we will obtain from this research will be real results because the sample was completely representative of the research community

(3) Years of experience:

Table (3)

Sample distribution according to experience

ratio	frequency	
%33.3	10	5 – 1
%16.7	5	10 – 6
%33.3	10	15 – 11
%16.7	5	16 years and over
%100	30	Total

We note that 33.3% of the sample had experience ranging between (1-5) years, 16.7% of which had experience between (6-10) years, and the rest more than 10 years. This is a logical sample and represents the research community

Therefore, the results that we will obtain from this research will be a real result because the sample represents the work of the research community.

Search Procedures

Charitable cooperatives organization, including: Jordanian Autism

- 1- Review the following studies related to the research topic, directly or indirectly.
- 2- Review the scientific references that cover the current research.

- 3- Conducting the necessary correspondence to facilitate the researcher's task with official groups
- 4- The new research unit was clearly structured as expected by educators mainly of autistic children
- 5- Taking into account the opinions, observations and suggestions of experts and preparing the questionnaire to achieve the research objectives.
- 6- The researcher reviewed the questionnaire among the abstracts.
- 7- The researcher collected information about the research topic by filling out questionnaires that were distributed to the research sample.
- 8- The researcher transcribed the data.
- 9- The data was reviewed, audited, and coded to facilitate the analysis process and transcribed onto the computer. The data was analyzed using the Statistical Package for Social Sciences (SPSS.ver22) system.

Statistical processing

The Statistical Package for the Social Sciences (22nd edition) program was used. (Statistical Package for Social Sciences –SPSS.ver22)

In conducting these analyzes and statistical tests and in order to achieve the research objectives, the following statistical methods were used:

A- Descriptive statistics: This is to display the characteristics of the sample members and describe their answers, by using the following:

- Percentage: It was used to measure the relative frequency distributions of the characteristics of the sample members.
- Arithmetic mean: It was used as the most prominent measure of central tendency.
- Standard deviation: It was used as one of the measures of dispersion.

B- Analytical statistics:

4) Independent Samples T-Test: It was used to test the significance of statistical differences between the averages of the results of the experiment with two independent categories, such as the variable gender (male and female), years of experience, field of specialization (specialist/non-specialist).

Stability test

The Cronbach Alpha test was used to measure the stability of the measurement tool, as the value of α for the questionnaire as a whole was 0.956, its value for the first question = 0.951, and its value for the second question was 0.886, which is an excellent percentage as it is higher than the acceptable percentage of 0.60.

Research Results

discussion and recommendations

Research results and recommendations:

- Music helps children with autism improve their mood
- Music helps children with autism disorder communicate better with everyone around them, whether children, teachers or educators.
- Music always makes children with autism feel comfortable, refreshed and active
- Music that includes rhythmic instruments trains the ear to hear the correct rhythm, which gives the child internal balance and organization of his thoughts and thus affects his personality.

Study recommendations

- Conducting a study on the extent of development of verbal communication skills for children with autism spectrum disorder during different age stages using music therapy: a longitudinal study.
- Establishing a special department for music therapy in colleges of education to graduate qualified cadres to deal with people with special needs in general, and those with autism spectrum disorders in particular

- Interest in training teachers on the use of all communication programs for children with special needs in general and those with autism spectrum disorder in particular through workshops and training courses.
- Music therapy must be approved and used in the designated daily treatment schedule in centers for autistic children.
- The music therapist must be academically qualified and hold a specialty certificate in “Music Therapy.” This is to deal with children according to the characteristics of the disorder they suffer from. Our country still lacks such specialization in our universities.
- It is very important that the therapeutic music class be in a fixed class. Because the autistic child loves habit, routine, and consistency.
- The timing of the class in the daily program is very important because the class that was timed before the group play class or the speech therapy class was more effective, because it makes them happy and encourages them to go out, participate and interact with others. As for the session that was at the end of the schedule, it was not very effective, because the child was excited to go home and did not respond well.
- Such a program would be more effective in cooperation with parents.
- Group therapy with music is very beneficial for autistic children

Presentation and discussion of results:**First question:**

Does music have a role in improving communication behavior in children with autism disorder?

Second question:

Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) between the opinions of teachers and educators of autistic children, whether specialists or non-specialists, regarding the role of music in improving communication behavior among children with autism disorder, due to the following variables: gender, specialty, and years of experience?

Presentation and discussion of results:

In this chapter, the overall research results that the researcher reached were presented as an answer to the questions that were raised, which represent the research problem, as a number of results were reached, in light of which a number of recommendations were presented. The results reached by this research are presented next:

First question:

The first question: Does music have a role in improving communication behavior in children with autism disorder?

To answer the first research question, the arithmetic mean and standard deviation were extracted to describe the sample answers in the paragraphs below:

Table (4)

The arithmetic mean and standard deviation to describe the sample answers to the paragraphs of the first question

Approval level	mean	standard deviation	Arithmetic Average	
middle	12	0.84486	3.1000	1
middle	7	1.27802	3.4333	2
middle	11	0.91287	3.1667	3
middle	14	0.76489	3.0333	4
middle	6	1.13512	3.4333	5

middle	1	1.18855	3.6333	6
middle	5	1.22474	3.5000	7
middle	2	1.16264	3.6000	8
middle	8	0.96847	3.4000	9
middle	10	1.31131	3.2667	10
middle	9	1.14921	3.3000	11
middle	13	1.25762	3.0667	12
middle	3	1.16511	3.5667	13
middle	4	1.47936	3.5333	14
middle		0.89578	3.3595	General average

The table above indicates that the sample's attitudes are positive towards the above paragraphs because their arithmetic means are greater than the mean of the measurement tool (3). We also note that the general mean of 3.3595 reflects an average level of agreement on the above variable according to the following scale:

Table (5)

Average level of agreement on the variable

Approval level	Category
Weak	2.33 – 1
Medium	3.66 – 2.34
High	5 – 3.67

We also note that Paragraph (6) is the most agreeable paragraph with an average of 3.633, while Paragraph (4) is the least agreeable paragraph with an average of 3.033. That is, music has an effect in improving communication behavior in children with autism disorder.

The second question: Are there statistically significant differences at the significance level ($\alpha \leq 0.05$) between the opinions of teachers and educators of autistic children, whether specialists or non-specialists, regarding the role of music in improving the

communication behavior of children with autism disorder, due to the following variables: gender, experience, and specialization?

To answer the second research question, the arithmetic mean and standard deviation were extracted to describe the sample answers in the paragraphs below:

Table (6)

The arithmetic mean and standard deviation to describe the sample answers to the paragraphs of the second question

Level of approval	mean	standard deviation	Arithmetic Average	
1	Medium	1.1059	3.4667	15
2	Medium	1.474	3.3667	16
3	Medium	1.1244	3.3333	17
	Medium	1.1247	3.3889	The general mean and its standard deviation

The table above indicates that the overall average of 3.3889 reflects a medium level of agreement on the above question. This means that the research sample agrees that there is a major role for music in improving communication behavior in children with autism disorder.

There was an improvement in the paragraph in which the child points to the things he wants to get (such as pointing to the instrument whose sound he wants to hear). The paragraph in which the child greets individuals familiar to him (such as his teachers and parents, i.e. raises and moves his hands when saying goodbye and receiving).

references:

- Aber, J. L., Brown, J. L., Chaudry, N., Jones, S. M., & Samples, F. (1996). The evaluation of the resolving conflict creatively program: An overview. *American journal of preventive medicine*, 12(5), 82-9
- Al-Qaryouti, Youssef, Al-Sartawi, Abdel Aziz, Al-Sammadi, Jamil. (2012). *Introduction to special education*. Dubai: Dar Al Qalam for Publishing and Distribution.
- American Psychiatric Association (APA). (2013). **Diagnostic and statistical manual of mental disorders,(5th ed.)**. Washington, DC: American Psychiatric Association.
- American Music Therapy Association. (2002). Music Therapy and individual with diagnoses on autism spectrum. 1-4. Accessed Online on [15 February 2017] from <http://www.hgmusictherapy.com/wp-content/uploads/2011/10/HGMT-Autism-Handout.pdf>
- Aziz, M.Z., Abdullah, S.A., Adnan, S.F., & Mazalan, L. (2014). Educational app for children with autism spectrum disorders (ASDs). **Procedia Computer Science**. 42. 70 – 77.
- CDC. (2016). Prevalence and Characteristics of Autism Spectrum Disorder Among Children Aged 8 Years - Autism and Developmental Disabilities

- Monitoring Network, 11 Sites, United States, 2012. **Morbidity and Mortality Weekly Report (MMWR)**. 65 (3). 1-23.
- Cheryl, O., & Pamela, S.W. (2011). Teaching children with autism to ask "What's That?" Using a picture communication *with vocal results* .**Infants and Young Children**. 24(2). 174-192.
 - Imran, Mona Ahmed Mustafa (2014). The effectiveness of using songs in developing some communication skills among a sample of autistic children. *Journal of Childhood Studies*. Institute of Graduate Studies for Childhood. Ain Shams University. 17(63).75-84.
 - Muhammad, Adel Abdullah (2014a). Education and rehabilitation strategies and intervention programs. 1st edition. Cairo: Egyptian Lebanese House
 - Muhammad, Adel Abdullah (2014). Introduction to autism disorder, theory, diagnosis and methods of care. Cairo: Egyptian Lebanese House.
 - Nabih Ibrahim Ismail 2009, The problem of psychological disorders, autistic disorder, its concept, diagnosis, treatment, and how to deal with it, Alexandria Book Center
 - Williams, T. I., Loucas, T., Sin, J., Jeremic, M., Meyer, S., Boseley, S., Fincham-Majumdar, S., Aslett, G., Renshaw, R., & Liu, F. (2024). Using music to assist

language learning in autistic children with minimal verbal language: The MAP feasibility RCT. *Autism*, <https://doi.org/10.1177/13623613241233804>

- Tsirigoti, Athina, and Maria Georgiadi. 2024. "The Efficacy of Music Therapy Programs on the Development of Social Communication in Children with Autism Spectrum Disorder: A Systematic Review" **Education Sciences** 14, no. 4: 373. <https://doi.org/10.3390/educsci14040373>