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## The Role of Music Activities to Enhance the Social Skills of Autistic Children

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### Abstract

*The role of music activities to enhance the social skills of autistic children. The current research aims to enhance some of the social skills of autistic children through a proposed music-based program. It also seeks to improve the verbal communication skills of autistic children. In addition, it targets developing the ability of autistic children in social interaction and participation through performing with another child or his caregivers. The study sample consisted of a one nine-year-old child in the second grade of primary school with autism (a case study) in the Emirate of Sharjah - the United Arab Emirates. In order to answer the research questions and hypotheses, the researchers followed a qualitative and quantitative approach. They also used the following tools, which they have prepared after verifying their sincerity and consistency: a preliminary questionnaire on autistic children, a scale of social skills for autistic children, and the music-based program. And to process statistical data, the researchers used the SPSS program. The results of the research indicated that there are statistically significant differences between the pre-test and the post-test for the training program on the level of social skills in the axis of verbal communication of the research sample. Also, there are statistically significant differences between the pre-test and the post-test for the training program on the scale of social skills in the axis of social interaction and participation of the research sample. Finally, the music-based training program has proven effective in enhancing the social skills of the research sample. Based on these results, the researchers developed a set of recommendations and proposed research.*

**Keywords:** Autism, Music-Based Activities, Verbal Communication, Social Skills.

## Chapter one: General Framework of the Research

### First: Introduction

Music occupies a distinguished place in the development of an autistic child so that he can participate in social life, due to the speed and ease of its impact on his conscience, and because it is an attractive tool for teaching him good social communication skills. Therefore, the use of music in psychological and physical treatment developed until music therapy associations were established. These associations received widespread interest, as the patient obtained medicine away from manufactured drugs and toxins.

Singing is considered one of the most important musical activities that an autistic child should be exposed to, as it encourages him to participate in group work while singing. It is considered one of the best ways to train the musical ear, as it works to improve the autistic child's attention and strengthen his memory through songs ideas (Al-Shaarawy, 2007).

Language is closely linked to singing, as singing turns language into rhythm, just as music turns into language. Language is one of the necessities of communication, and one of the rules of thinking and

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creativity. Therefore, it is necessary to use this music to develop the language skills of the autistic child, as it gives him verbal skills in community participation and social communication (Abdel-Fattah, 2008).

Many scholars have pointed out that the musical experiences of the autistic child can transform unwanted stimuli into socially acceptable activities. Music can arouse feelings and create an atmosphere of warmth and positive relationships between the autistic child and those who come into contact with him.

There are various methods of using music in treatment and recover such as musical performance or by singing. Through this study, we will adopt a proposed program based on music therapy, where the autistic child can communicate linguistically and performatively by sharing the performance with another person or a group of people, which ultimately leads to enabling the autistic child to adapt and communicate with others.

### **Second: the Research Problem**

Children with autism always suffer from a real emotional deficit that limits the possibility of their intellectual development and mental growth. This is due to their isolation and weak concentration in acquiring academic skills and their lack of social skills which are necessary to maintain good social relationships with those around them. This may lead to them being ignored or treated poorly and increase their isolation.

The performance of children with autism in various activities is limited to individual performance, and they are not accompanied to perform with others whether in a group or in pairs, because one of the symptoms of autism is the lack of social interaction and the difficulty of verbal and non-verbal communication with those around them. This is due to their lack of experience in how to communicate with others, in addition to the lack of awareness of their ordinary colleagues on how to deal with them as well as accept them (Ben Siddik, 2007).

From the foregoing, the research problem appeared as a result of the lack of social skills in children with autism, which leads to many behavioral disorders that hinder their mental and psychological development. The importance of this research lies in studying the effectiveness of a program based on participation in musical activities, which may lead to alleviating the symptoms of autism and improving the concept of social communication for children with autism, as it helps them deal and interact with language clearly and motivate them to engage with others.

The research problem can be formulated in the following main question:

What is the role of musical activities in improving the social skills of children with autism?

### **Third: Research Hypotheses**

1. There are no statistically significant differences between the pre-test and the post-test of the training program on the social skills scale in the verbal communication axis of the research sample.
2. There are no statistically significant differences between the pre-test and the post-test of the training program on the social skills scale in the social interaction and participation axis.
3. The music-based training program helps improve the social skills of the research sample.

### **Fourth: Research Objectives**

This research aims to improve some of the social skills of children with autism through a proposed program based on music. In light of this, the current research seeks to:

1. Improving verbal communication skills for children with autism.
2. Improving the ability of children with autism to participate and socially interact by participating in performance with another child or his caregivers.
3. Showing the caregivers to children with autism that innovating and developing modern methods for dealing

with this group of children will lead to positive changes for the autistic child and society as a whole.

### **Fifth: the Importance of Research**

The importance of this research lies in that it deals with an important group of society, which is the group of children with autism, where those interested and researchers must shed light on all programs and methods that help develop their social and interactive skills. Lack of attention to the autistic child in this regard leads to the child withdrawing into himself, which leads to behavioral disorders and aggressive tendencies towards others.

The scarcity of studies and research that dealt with the issue of improving the social skills of autistic children in general and the use of music in developing these skills in particular in the United Arab Emirates. For this reason, the research is applied to a nine-year-old child with autism (a case study) in the Emirate of Sharjah (Sharjah Autism Center).

### **Sixth: Research limits**

This research is limited to the following limits:

Objective limitations: The current research deals with some musical activities, including singing, reciting songs, lyrical stories, and musical games. And some verbal communication, social interaction and participation skills.

Time limitations: The proposed music-based program was implemented in the first semester (Fall 2019-2020) for a period of 15 weeks.

Spatial limitations: United Arab Emirates - Emirate of Sharjah - Sharja Autism Center.

Human limitations: The current study was limited to a one child with autism (case study, aged nine years, in the second grade of primary school)

### **Seventh: Research Concepts and Terms**

#### ***Autism***

Procedural definition of autism: The researchers defines autism as a neurological disorder that occurs in the first years of a child's life and includes three main manifestations: noticeable deficiency in various communication skills, such as verbal and non-verbal communication skills and social interaction, and having stereotypical repetitive forms of behavior.

#### ***Program Based Musical Activities***

Through the researchers review of some studies that dealt with programs based on musical activities, they define musical activities procedurally as a group of musical works used by those in charge of caring for children with autism, and these activities are represented in listening, singing and musical games.

#### ***Social Skills***

The procedural definition of social skills

They are behaviors that make the child effective in his social milieu, helping him to communicate with others in different situations where understanding an empathy build positive social relationships that enable him to face social situations and the ability to learn, play roles and solve problems.

## **Chapter Two: the Theoretical Framework and Previous Studies**

This chapter reviews previous literature and studies that have addressed the subject of autism by research and study. It addresses the definition of autism, causes of autism, characteristics of children with autism, a presentation of the elements of social skills and the impact of social skills on the autistic child, and finally a presentation of the most important previous studies.

### **First: Definition of Autism**

The term autism is not a new term at all, as the first person to use the word autism was “Eugen Bleuler” in 1911, and he defined it as a group of solitary thinking that appears in schizophrenia, and after that in 1943, Dr. Leo Kanner explained the concept of autism comprehensively. Thus, he became the first to identify this disorder in psychiatry. (Al-Maedi, 2008).

Autism is a Greek word that means solitude or isolation, and it is called in Arabic “solipsism” but it is not a popular term. Khalifa (2014) defines autism as being enclosed in oneself, absorbed in thinking, poor ability to pay attention, weak ability to communicate and establish social relationships with others, in addition to the presence of excessive motor activity. As for Carter & Preston (2009), they defined it as one of the hollistic developmental diseases which is a behavioral disorder that results from multiple causes characterized by deficiencies in communication skills.

### **Second: Causes of Autism**

There are many factors mentioned by scientists and researchers as causes of autism based on their various interests and specializations, but they have not yet arrived at a definite cause behind autism. Rather, the causes differ from one person to another. This is because there is no specific symptom, but rather a group of symptoms that differ in terms of severity and quality from one child to another. Ghazal (2007) confirmed that when he mentioned that “autism is not a specific disease with a specific symptom, and it has no investigations or tests that determine it, but rather a set of symptoms and behaviors that differ in intensity and quality from one child to another, and they also vary in the child himself whether it increases or decreases. Despite the many studies and research conducted, the causes of autism are still unknown.”

Some of the assumptions that dealt with the causes of autism are presented below:

#### **Genetic Causes**

The genetic component is a cause that explains autism disorder, and this explains why autistic children from a family with a history of autism suffer from the same disorder, and the incidence of it among twins also increases. Some studies have also found that there is a link between the presentation of autism and chromosomal abnormalities such as the study by Zanolli and Daggett which results indicated that there is a link between this disorder and a chromosome called the “fragile X” chromosome. This chromosome is responsible for a defect in the mental aspect and may lead to mental retardation. This chromosome is involved in a ratio of 16:5 percent in all cases, and this association may explain the increase in males being more affected than females by autism (Bayoumi, 2008).

#### **Biological Reasons**

Some scientists attribute autism to biological rather than psychological factors. Scientists have found a relationship between the mother’s infection with some viral infections and autism. These infections include German measles or fever during pregnancy, viral cell hyperplasia and viral cellulitis. Some believe that vaccination may lead to autistic symptoms due to the failure of the immune system to produce sufficient antibodies to eliminate vaccine viruses, which makes it capable of causing distortions in the brain, and then the symptoms of autism appear (Al-Sabi, 2009).

#### **Environmental Reasons**

The environmental pollution that the child may be exposed to, whether before birth or after birth in the critical stage of development, such as: toxic chemicals and heavy metals such as lead and mercury may affect the child’s development in the various stages of growth, and an increase in the proportion of these substances in the child’s body leads to the child’s weak ability to get rid of these toxins. (Saleh, 2012).

### **Third: Characteristics of Children with Autism**

The characteristics of children with autism vary to include all stages of their development. As previously mentioned, these characteristics vary in terms of their strength and continuity from one autistic child to another. We will present these characteristics below:

#### **Behavioral Characteristics of Children with Autism**

Many studies have reported that autistic children exhibit forms of behavior including:

##### **Stereotyped Behaviour**

Stereotypical behaviors are considered to be the absence of any independent child for more than a year in recognizing objects and people in his environment, as he directly deals with toys and things that fall within reach, and his interaction is limited in type and frequency without using another pattern or other, and he prefers to associate with inanimate objects. More than humans, the child often repeats stereotyped movements such as drawing the head, rubbing the hands, twisting and turning things. The autistic child resists change, such as changing the dress code and daily living room furniture, and is very attentive to the change that occurs in the environment around them (Ghazal, 2007).

##### **Aggressive Behaviour**

Deficiencies in social skills, social withdrawal, emotional dullness, and lack of interest in social values lead to feelings of frustration, inferiority, and poor self-confidence, which pushes the autistic child to aggressive behavior, whether it is self-harming, harming others, or destroying property. It may also lead them to some other anti-social behaviors, although the most common one for them is aggressive behavior in its various dimensions, which may appear in the form of verbal or physical aggression and direct or indirect signals (Bakhsh, 2002).

##### **Emotional Dullness**

A noticeable characteristic of children with autism is their lack of response to attempts to love, hug, or show feelings of affection. Parents always say that their child does not care about being alone or in the company of anyone, in addition to his severe inadequacy and failure to control his emotions and emotional relationships with those around him (Al-Antabli, 2011).

#### **Social Characteristics of Children with Autism**

Social skills are one of the characteristics that are most negatively affected by autism, and are represented by deficiencies in social interaction, deficiencies in the linguistic aspect, and the ability to speak and imitate.

##### **Deficiencies in Social Interaction**

The main characteristic of autism is social deficiency. Compare the social behavior of normal children and children with autism. Normal children show continuous behaviors acquired through seeing adults they are familiar with, and they learn quickly and respond in an appropriate and effective social manner. However, the matter is different for autistic children. They often lack this natural ability to respond to others in an appropriate manner (Muhammad, 2011).

##### **Deficiencies in the Ability to Imitate**

The autistic child suffers somewhat from a deficiency in the skill of imitation, and thus his ability to learn and comprehend various social skills is reduced. There are also some children with autism who can imitate and imitate others well, which enables them to acquire social skills. Therefore, if we train children with autism to imitate, that will produce significantly positive results. (Al-Sanaani, 2013).

**Slurred Speech**

Indicators of linguistic deficiency begin to appear early in the autistic child, perhaps in the first three months, when abnormal calmness, the absence of babbling and negativity in the child are observed in this period. Therefore, one of the important goals in training most children with autism is to help them develop a communication system that does not include complex language. Rather, it contains words associated with signs (Al-Kuwaiti and Ahmed, 2014).

Al-Abasiri (2011) also explains that linguistic deficiency in autistic children does not result from a lack of desire to speak, but rather from a dysfunction in the neural centers related to the development of language and speech. Therefore, the autistic child cannot express in a clear and understandable way even after training, which increases his isolation. The autistic child mixes the pronouns when talking to others. He refers to others with the pronoun "I" and to himself as "he" or "They," and uses "I" when he means "you."

**Cognitive Characteristics of Children with Autism**

The mental processes represented in thinking, perception, attention, understanding, remembering and imagination are among the most important cognitive functions necessary for the child's success in various fields, including social interaction and language acquisition, because any disturbance in these processes affects the child's performance in various fields. Studies indicate that cognitive impairment is the most characteristic feature of autism. Some research has indicated that more than 50% of autistic children suffer from a disorder in the cognitive aspects (Al-Qamish, 2011).

**Motor Characteristics of Children with Autism**

An autistic child reaches a level of motor development similar to a normal child with a slight delay in the growth rate. However, there are some aspects of motor development that seem unusual, as autistic children have a special way of standing, as most of them stand with their heads bowed as if they were staring at their feet and their arms wrapped around each other up to the elbow. When they move, many of them do not move their arms to their sides, and they repeatedly hit the ground with their feet forward and backward. There are some children with autism who are characterized by agility in walking movements, and they have the ability to climb and maintain balance, while others may lack agility and they appear to suffer from some difficulties in maintaining their balance when walking (Al-Arabi, 2018).

**Sensory Characteristics of Children with Autism**

Many studies, including the study of Al-Arabi (2018), indicate that children with autism have clear sensory disturbances during the first year of life; Sensory affection can often be a significant symptom of an excess of obvious environmental stimuli, loud noises, insensitivity to pain, and a fondness for smells, colors, food, or textures.

**Fourth: Elements of Social Skills**

Many studies have indicated the components of social skills, and the components differed depending on the concept and characteristics. Bondy & Tincani (2004) stated that social skills include verbal communication skills and non-verbal communication skills:

**Verbal Communication Skills**

Verbal communication is related to the process undertaken by the sender or receiver while transmitting a verbal message.

It is divided into two parts: oral communication and written communication skills.



### **First: Oral Communication Skills**

It consists of two basic skills: speaking skill: it is done by conveying the message by using words verbally by the sender. As well as the skill of listening: it is done by receiving the verbal message and understanding its meanings by the recipient, and because the sent message is verbal the listening skill is considered one of the oral communication skills.

### **Second: Written Communication Skills**

#### ***It Consists of Two Basic Skills***

1. Writing skill: It is done by conveying the message by using the words written by the sender.
2. Reading skill: It is done by receiving the written message and understanding its meaning by the receiver, and because the message is written, the reading skill was considered one of the written communication skills.

### **Non-Verbal Communication Skills**

Nonverbal communication is related to individual's using of movements, gestures physical expressions, or vocal changes to convey their messages.

It is divided into two parts: Visual Non-Verbal Communication Skills, and vocal Non-Verbal Communication Skills.

#### **First: Visual Non-Verbal Communication Skills:**

They are the skills through which the sender uses movements of his hands or any part of his body to convey his thoughts, opinions, desires and feelings to others. And these skills also include facial expressions, eye movements and smiling. All of these skills are revealed through visual observation by others.

#### **Second: Vocal Non-Verbal Communication Skills**

These are the skills in which the sender uses the variety of pitches and tones of his voice to convey the message, the word itself. Thus, the tone of voice gives a meaning other than the actual meaning of the word. Hence, voice tones are considered non-verbal skills, even though they depend on the pronunciation of words.

In addition to verbal communication skills and non-verbal skills, Farhat (2014) mentioned other skills besides these skills, where the ability of the autistic child to integrate with those around him comes as the following:

- 1) Independence skill: This skill requires the child to acquire many motor and linguistic skills. The development of this skill begins with training the child to feed himself, take care of himself and maintain personal hygiene. And it progresses until the child is able to dress himself. As the child grows older, he gradually separates from his parents, and his circle of social relationships expands. His dependence on his parents gradually decreases, and is replaced by self-reliance and independence from others.
- 2) The skill of free competition: This skill usually begins in the fourth year, as competition must be for the purpose of reaching excellence, and for the child to learn without wasting the rights of the others.
- 3) Cooperation skill: the child begins to acquire this skill through collective playing situations, which usually appears at the end of the third year, and usually the child tends to play with another child, then play with more than one child.
- 4) Participation skill : It is close to the skill of cooperation, but the skill of participation brings direct benefit to the child himself through his participation with others in playing, and for children to learn to participate in a calm manner far from selfishness and dishonest competition.

- 5) Imitation skill : Imitation is not just a skill, it's also, a behavioral pattern for the child and it turns into a skill when it is done for the purpose of learning and gaining experience, and in this situation, the imitated model must be a good example and an honorable model.

#### **Fifth: The Impact of Social Skills on the Autistic Child**

The most significant obstacle for children with autism is closure, isolation, and lack of integration with others. Therefore, social skills play a strong role in the life of the autistic child and those who care for him and take care of him. Among these positive roles, as stated by Al Sharaa (2018), are the following:

- 1) Social skills occupy a very important place in behavioral programs for all categories of people of determination, due to the social problems that this category faces, due to many reasons, the most important of which is the lack of social skills, including the skill of participation, attention, cooperation, role-playing, speaking with others and listening to them, kindness and eloquence.
- 2) Social skills help children with autism play with their friends and communicate with them.
- 3) Social skills help children with autism behave properly in different situations.
- 4) Social skills help children with autism integrate and interact with the community surrounding them, whether at home, with relatives, or with their classmates in the classroom, and increase opportunities for communication and establishing positive social relationships with those around them.
- 5) Developing the social skills of children with autism helps reduce their aggressive behavior, as well as their self-harm.
- 6) Acquiring social skills helps children with autism achieve a great deal of independence, self-reliance, enjoy leisure time, improve their self-confidence, and help them interact with others positively, creatively, and innovatively within the limits of their cognitive and physical energy.

#### **Sixth: Previous Studies**

In this part, we will discuss previous studies that dealt with the variables of the study in terms of developing social skills for children with autism in general and the use of music to develop these social skills among the same group in particular as follows:

The study of Wollfberg (2014) presented a program based on the formation of what is known as integrated play groups, where you integrate children with autism of mild or medium degree into play groups with their friends who are normal children of the same age group and are called integrated play groups. One of the objectives of this program is to develop social skills and social interaction skills for children with autism through group play, which includes various group play activities such as art, music and drama, and symbolic and imaginative play through group play with peers. This study dealt with (48) children with autism whose ages ranged between 13 and 7 years, they participated in the integrated play groups program. It was observed that the children moved to higher levels of play, where an increase in social skills, interaction, and symbolic and imaginative play were observed. The researcher concluded important results, which are that the participation of autistic children in groups, playing with peers of ordinary children has, significantly helped in the development of their social skills based on the observations of parents and teachers.

Al-Khiran Study (2011): This study attempted to identify the effectiveness of a training program for the development of verbal communication in a sample of children with autism. The sample consisted of (12) children with autism. Where they were divided into two groups, control and experimental, and the members of the experimental group were trained using behavior modification techniques such as



imitation, shaping and indoctrination that are contained in the proposed program. The following results: There are statistically significant differences at the significance level of 0.05% between members of the experimental group and individuals of the control group in post-performance on the Verbal Communication Rating Scale in favor of the experimental group. There are statistically significant differences at the significance level of 0.05 between members of the experimental group and the control group in Post-performance on the social interaction estimation scale in favor of the experimental group.

The study of Muhammad and Ezzat (2008): This study aims to provide a therapeutic program with music to develop and improve the linguistic development of children with autism, including vocabulary, structures, and the correct use of pronouns. And thus, helping children with autism to integrate with others, and to participate in various situations and different social interactions, and the study sample consisted of (8) children with autism between the ages of 9-13 years, and they were divided into an experimental group and a control group. The study used the Goddard intelligence test, the autistic child scale, the verbal communication scale, and the music therapy program. The results of this study revealed the effectiveness of the music therapy program in developing language development for children with autism.

Lyons (2008): This study aims to develop the social communication skill of the autistic child, such as the skill of mixing with others in a meaningful way, making friends, self-regulation skills, visual communication, social interaction and participation, using a program based on playing with peers. The study sample is a three-year-old child who suffers from autism, in addition to severe language impairment. The researcher developed a program based on playing with peers in order to develop social skills and verbal communication skills for children with autism. This is in addition to the child receiving speech and communication sessions at home and in the pediatric clinic. The researchers has developed an individual educational plan that includes many long-term goals over a whole year. The results indicated a slight improvement in the child's language communication skills and social skills, through the researchers's observation, the mother's and father's report, and through the application of the Autistic Childhood Scale.

Ghazal Study (2007): This study aimed to test the effectiveness of a training program for developing social skills among a sample of autistic children in the city of Amman. The study sample consisted of two groups, an experimental and a control group of 10 children with autism. Where the researchers developed a list of estimating social interactions for children with autism. He used the arithmetic averages and standard deviations for the scores of the experimental and control groups to address the study questions, in addition to using the joint analysis of variance method. The results of the study were summarized in several points: the most important of which is that there are statistically significant differences in social skills between the members of the experimental group and the control group on the post-test in favor of the members of the experimental group.

Al-Shaarawy's study (2007) This study aims to identify the effect of the kinetic musical story in developing some positive behavioral patterns among pre-school children, among normal children and intellectually disabled children. The research sample was chosen from normal children (30) and intellectually disabled children (9). The researcher used tools that include the theoretical aspect of music as well as the practical aspect of kinetic music activities and selected some positive behavioral patterns among the sample children: "order, cleanliness, cooperation, honesty, and helping the needy." The proposed experimental program for developing some positive behaviors in a pre-school child through a kinetic musical story contains of (5) lessons, which are presented in (5) weeks, one lesson each week, and is implemented in two sessions for the normal children and three sessions for the intellectually disabled children. The results have proven that there are statistically significant differences between the group average scores for normal children before and after implementing the program, and there are statistically significant differences between the group average scores for normal and intellectually disabled children before and after implementing the program.

Shore (2002) study: This study aims to identify the effect of music therapy on autistic children. The sample consisted of 8 children between the ages of 9-12 years. The sample was divided into two groups: the control group and the experimental group. The study applied tests for communication, social interaction, and self-esteem before and after using the music therapy program. The results of the study showed an improvement in communication and social interaction among the experimental group, and that the use of musical instruments by children with autism led to an increase in their social interaction and ability to communicate.

Study by Amin and Azaz (1998): This study aims to identify the effect of using music as a specific means to develop some skills for the intellectually disabled children. The sample included a number of intellectually disabled children who were teachable. They numbered 29 children, aged between 9-12 years. The test was oral and included all the activities of the program and achieved the objective goals of the program, in addition to the program that relies on singing, listening and movement to develop the skills of the intellectually disabled child. It was found that the post-test was higher than the pre-test in the three skills (maths, reading, and compatibility with living in society). The program resulted in the development of reading skills, as the children were able to extract sounds while singing, improved their pronunciation of letters and their verbal expressions, and developed the arithmetic skill, as the children were able to know the components of different numbers and weights.

### **General Comment on Previous Studies**

By looking at the studies that provided educational and therapeutic programs for children with autism, we note that most of them agree on the importance of training in social skills, and the use of music, singing and rhythms to develop these social skills, whether verbal or non-verbal communication skills, as well as social interaction among children with autism. Therefore, we conclude the following from the previous studies:

The use of a music-based program proves its effectiveness in reducing the symptoms of autism and developing social skills in children with autism, as in the study of Muhammad and Ezzat (2008), and the study of Shore (2002), as well as the study of Amin and Azaz (1998).

Music was used as a specific means to develop speech and reading skills among a sample of children, not with autism, but intellectually disabled children, such as the study of Amin and Azaz (1998).

The current research agreed with previous studies in the need to provide different methods, methods and training programs to develop social communication skills for children with autism; In order to make them able to communicate and interact socially properly with others, and the most important of these programs is the use of musical activities and singing, and play therapy, using collective play activities. The current research agrees with other studies in clarifying the importance of training programs for children with autism in general and the use of group activities such as music Especially to develop social skills, such as the study of Wolfberg (2014).

The current research agreed with the study of Al-Khairan (2011) in developing verbal communication skills only in children with autism as one of the components of social skills.

The existence of studies that emphasized the importance of the role of group play activities in developing social skills for children with autism, such as Wolfberg (2014) and Lyons (2008).

### **The Extent to Which the Current Research Differs from Previous Studies**

The current research differs from some previous studies in that the training program relies on various musical activities such as reciting chants, singing or playing musical instruments. Therefore, the diversity of musical activities can give more room for children with autism to interact, participate and communicate

verbally, which are the focus of this research. Most of the previous studies focused on play activities and general training programs, but this research focused on musical activities in an attempt to highlight its role in developing some components of social skills, namely social interaction and verbal communication.

## **Chapter Three: Research Methodology and Procedures**

This chapter explains in detail the approach used in the current research, as well as the procedures that were taken to achieve the research objectives, which is to identify the effectiveness of a training program based on music (as an independent variable) in improving the social skills of children with autism (as a dependent variable), and it was applied to a one autistic child. He suffers from weakness in communication and social skills, and appropriate tools were used and applied for research.

### **First: Research Methodology**

The design on which this research relied is the “quantitative and qualitative” approach. The research dealt with a case study of a nine-year-old child with autism, in the second grade of primary school. The qualitative and quantitative approach was chosen as it suits the nature of the current research.

### **Second: the Research Samples**

The research sample was chosen from the Sharjah Autism Center in the United Arab Emirates, where the current research is applied to a nine-year-old child with autism.

### **Third: Research Tools**

1) A form for collecting primary data about the autistic child (prepared by the researchers):

The researchers designed a questionnaire to collect preliminary and detailed data about the child with autism for the research sample and to get to know his family and school environment in terms of: the child's name, which we will refer to as (M.S.), date of birth, number of brothers and sisters, the child's arrangement among his sisters, and the medical history of the family members and the child, IQ, name of the school attended, date of enrollment in school, standard of living of the family, whether there is a kinship between the father and mother, whether there are members in the family with autism or any type of disability, type of birth of the child with autism, education level of the father and mother, nature of the work of the father and mother and the motor, social and linguistic characteristics of the child.

2) A scale of the social skills of the autistic child: ( prepared by the researchers):

### **The Purpose of The Scale**

To identify the extent of improvement or lack of improvement in the autistic child in verbal communication skills and social interaction, through a set of paragraphs that illustrate the behavior of the autistic child and the extent of his ability to perform social skills, which are the two main skills in this research: social interaction and verbal communication.

### **Scale Design Steps**

Access to theoretical frameworks related to the social skills of children with autism, by reviewing literature, research, and books that address verbal communication and social interaction skills.

Review of the new version of the Statistical Manual V ( 2013) regarding autism and social skills.

Based on what was mentioned above, the researchers initially designed a scale of social interaction and verbal communication skills, which consists of several items to measure these skills. This scale was presented to a group of professors, specialists, and expert. And after arbitration and expressing their

opinions, the researchers edited some of the paragraphs and deleted others, arriving at the final form of the social skills scale.

### **Scale Description**

The social skills scale in its final form after the arbitration stage consists of (50) paragraphs divided into two axes, each axis deals with assessing a specific skill.

Paragraphs (1-25) are found to be dealing with assessing verbal communication skills, and paragraphs (26-50) are found to be dealing with assessing social interaction and integration skills. An estimate of each of the phrase has been made through one of the following options (never, rarely, sometimes, always), so that the selection (never) is zero, the selection (rarely) is one, the selection (sometimes) is two, and the selection (always) is three.

### **Scale Application**

The social skills scale was used by (7) people. They are the father and mother of our case study, (2) assisting teachers of the child and the (3) authors of the research. They observed the child's attitude before, during and after the program.

### **Validity and Constant Factor**

The validity of the arbitrators: The content validity of of this scale was confirmed by presenting it to 8 arbitrators of psychology professors and experts, as the percentage of agreement between the arbitrators reached more than 80%.

Self-validity: was calculated by calculating the correlation coefficient, where the scale's validity coefficient became = 0.9843.

Consistency of the scale: The Cronbach's alpha coefficient was calculated to determine the coefficient to the axes of the social skills scale where it was = 0.9721.

3) The training program based on musical activities to improve social skills: (prepared by the researchers)

Musical activities occupy a great interest by psychologists, as the results prove that the various aspects of the individual's personality can be improved by using music and singing, as music becomes an emotional means that can bring about many positive changes in the individual's functional performance. In addition to musical spoken language, which can improve children's verbal communication skills, participating in singing, playing and other musical activities, which are expected to improve children's social interaction and improve their mood and attention, we make the most of children able to learn and train.

Based on the above; The researchers prepared a proposed music-based training program to develop social skills for children with autism and applied it to the case of the autistic child (case study).

The researchers cooperated with two teachers of the child to help implement the program, in addition to a music specialist to design the program in light of the program's objective, the research sample, research objective, research questions and the used standards.

The overall goal of the programme:

Improving the social skills of a child with autism who has the ability to learn. He can learn new words and expressions and has the desire and ability to share these words and expressions with others in similar situations, thus improving social interaction and participation.

### **Program Components**

The program consists of (45) sessions, (3) sessions per week over a period of (4) months. The duration of each session is 30 minutes. The program includes: many songs suitable for the age of the research sample, and musical and percussion instruments were used to make it easier for the autistic child to use them, such as keyboards, tambourines, musical bells, drums, and the nature of their performance that is popular with children. Also, individual singing, and most importantly, the group singing strategy were widely used to encourage the child to participate, interact and integrate. As the assisting teachers used to sing in front of the autistic child, they were modeling the desired behavior in front of them and training them to sing using explanation, repetition, training, modeling, acting, reciting musical stories and participating in playing musical instruments and supporting the correct response of the autistic child through physical and verbal stimulation, as well as some games that are popular with children.

There are several considerations taken into account when determining the content of the music-based program:

1. The songs and rhymes presented to the child must be attractive and characterized by excitement and suspense and appropriate to the child's age and mental stage.
2. The musical activities should range from the easy ones to the difficult ones so that the child can understand them, and provide him with opportunities for success so that he does not become frustrated and relapse .
3. Songs and chants should have short and simple linguistic phrases and musical rhythm.
4. Musical activities help the child to express themselves and interact socially.
5. An autistic child is attracted to repetition, and here we can make the most of songs with one repeated syllable or repeated word.
6. It is necessary to provide the autistic child and the children who participate with him in singing with feedback, such as correcting incorrect behavior or incorrect pronunciation while performing musical activities.
1. The songs should be simple in their meanings, where the meanings are enthusiastic and encouraging, as well as the words are familiar to the extent that allows the child to pay attention to his pronunciation of words, syllables, letters, and singing at the same time.
2. The content of the initial program was shown before it was applied to the mother of the autistic child (M.S), in order to find out what arouses the child's interest, what makes him angry, what he prefers, and what increases his response.
3. It was taken into account that there should be a performance of movements expressing the meaning of the song or anthem, as this contributes to understanding the words, as well as the importance of using memorization, repetition, and clapping with the rhythms which is commensurate with the nature of the child with autism.

### **Program Techniques Used**

Reinforcement, repetition, explanation, modeling, role playing, group singing, manual training and improvement.

Stages of applying the music-based training program to improve the social skills of children with autism:

### **The First Stage (Preliminary Stage)**

This stage lasted (3) weeks. At this stage, the goal was not to train the child (M.S.) in any skill. Rather, the goal was to get to know the child and his environment closely, collect observations, identify the child's (M.S.) favorite reinforcers, conduct interviews, and observe behavior. The child with his classmates and creating an atmosphere of familiarity between the child and the researchers, and between the child and his classmates participating in the program, as well as between the child and the teachers assisting in implementing the program.

During this stage, the pre-application of the scale used in the research was conducted.

### **The Second Stage (Implementation Stage)**

This stage lasted for (7) weeks, and here the actual implementation of the music-based program began with the aim of developing the social skills of the child (MS), especially the first skill, verbal communication, which is considered an important introduction to the second skill, which is the skill of social interaction and participation. The child (M.S.) began training and performed a variety of musical activities as follows:

1. The child (M.S.) participated in group singing with the researchers and the assisting teachers.
2. The child (M.S) performs individual chants and songs while acting out what he sings.
3. The child (M.S.) plays musical chairs with his classmates after the researchers explains this game to them.
4. The child (M.S.) sings individually, and his classmates repeat the anthem or song behind him.
5. Singing introductory songs and anthems, such as songs about jobs, time, months, and types of food.
6. The researchers uses colored cards and asks the child (M.S.) to respond when he hears the desired color or shape, for example, traffic songs and road signs.
7. Playing musical and rhythmic instruments by imitating his colleagues or the researchers and their assisting teachers or imitating the rhythm hehears.
8. Exchanging musical and rhythmic instruments, where the child (M.S.) distributes these musical instruments to his classmates and collects them from them at the end. The child (M.S.) and his classmates participated in playing the musical and rhythmic instruments together, repeating the songs they have learned.

### **Third Stage (Final Stage)**

This stage lasted (5) weeks, and in this stage the researchers retrains the child (M.S.) in the musical activities that were previously covered in the previous sessions, where training is to improve the language, cooperation, interaction, imitation, taking responsibility, and self-direction. All the techniques and strategies that were used in the implementation phase were used, as retraining can prevent a relapse after the end of the program, and repeating the work leads to avoiding any negative circumstances that may have occurred in the initial training. It also works to maintain the effect and increase its effectiveness during the follow-up period and after it.

Finally, the post-application of the scale used in the research.

### **Fourth: Research Steps**

The researchers followed the following steps in order to conduct and implement this research:

- 1) Selecting the research sample: a child with autism (case study) from one of the autism centers in the United Arab Emirates - Sharjah Autism Center - Emirate of Sharjah, and also obtaining the guardian's approval to apply the research program to the child (research sample).
- 2) Determination of the tools used in the research.
- 3) Applying the Social Skills scale to the child (M.S.) and using it as a pre-scalement.
- 4) Applying the training program to the child (M.S.) over (45) sessions and for (15) weeks.
- 5) Applying the Social Skills scale to the child (M.S.) and using it as a post-scalement.
- 6) Conducting a follow-up scalement (social skills scale) two weeks after applying the training program to the child (M.S.).
- 7) Unpacking and analyzing the results and performing the appropriate statistical operations to answer the research questions.
- 8) Draw and interpret results.



9) Providing some recommendations related to the research topic and proposing some future research.

**Chapter Four: Research Results**

This chapter presents the most important results reached by this research in light of its objectives and questions, through the data collection tools used. This is done by presenting each research hypothesis separately and the results related to it, then commenting on them.

**Statistical Methods Used in Research**

Due to the small size of the research sample and the nature of the research, which is a case study of only one autistic child (M.S.), scaled by four individuals using the social skills scale test as a pre- and post-test, and by applying the music-based training program; The researchers used several statistical methods to process the data through SPSS, which is a program used to analyze statistical data. These statistical methods are:

Correlated samples test (Wilcoxon) in order to detect statistically significant differences between the average grades of the research sample's scores in the pre-test and post-test, using the social skills scale to determine the amount of change made by the music-based training program in improving the skills of the autistic child (M.S.). The research covers two aspects: the first aspect: verbal communication skills, and the second aspect: social interaction and participation. Seven people participated in evaluating the child: the child's father and mother (M.S.), the two teachers who participated in implementing the training program and the authors of this research; Therefore, the sample that was used in the statistical analysis consisted of the responses of the seven individuals who evaluated the social skills of the child (M.S.) using the social skills list scale as a pre-test and post-test.

Using the correlation coefficient to calculate validity and reliability.

**First: First Hypothesis Results**

The first research hypothesis states that: There are no statistically significant differences between the pre-test and the post-test of the music-based training program on the scale of social skills in the verbal communication axis for the research sample. To verify the validity of the hypothesis, the Wilcoxon test was used to indicate the differences between the averages for small samples. This procedure resulted in the following table:

**Table (1):** Significance of Differences Between the Arithmetic Means and Standard Deviations Before And After Applying the Program in Verbal Communication Skill.

Axis	Application time	number of participants	SMA	standard deviation	significance level
Verbal communication skills	Pretest	4	18.45	0.81	0.001
	Posttest	4	29.80	0.91	

It is clear from the previous table that there is statistical significance, as the average performance of the child (M.S.) in the research sample for the social skills scale related to the verbal communication axis is lower in the pre-application, which amounted to (18.45) than the post-application, which amounted to (29.80), and the difference between them amounted to (11.35). This is in favor of the post-test and significance application at the level of (0.001).

**Second: Second Hypothesis Results**

The second research hypothesis states that: There are no statistically significant differences between the pre-

test and the post-test of the music-based training program on the social skills scale in the social interaction and participation axis. To verify the validity of the hypothesis, the Wilcoxon test was used to indicate the differences between the averages for small samples. This procedure resulted in the following table:

**Table (2):** Significance of The Differences Between the Arithmetic Means and Standard Deviations Before and After Implementing the Program in The Skill of Social Interaction and Participation.

Axis	Application Time	Number Of Participants	SMA	Standard Deviation	Significance Level
Social interaction and participation skill	Pretest	4	24.25	0.89	0.001
	Posttest	4	29.27	0.81	

Considering the results shown in Table No. (2), we find that the average score of the research sample on the social skills scale (the second axis: social interaction and participation) before applying the music-based training program was (24.25), and the average score of the same sample was on the same scale after applying the program. (29.17), so the results show that there is a difference between the arithmetic means of (15.02) in favor of the post-test and significant above the significance level (0.001).

### Third: Third Hypothesis Results

The third hypothesis states that: The proposed training program based on music helps in developing the social skills of an autistic child (case study); To verify the validity of this hypothesis, the Wilcoxon test was used to indicate the differences between the averages of the samples on the two research axes. The first axis is related to verbal communication skills, and the second axis is related to social interaction and participation. The results were as shown in the following tables:

**Table (3):** Significance of Differences Between the Average Scores of the Sample Before and After Applying the Program on the First Axis: Verbal Communication Skills, and the Second Axis: Social Interaction and Participation.

Axes	Group	n	Scores Average	Total Scores	Z	Significance Level
Verbal communication skills	Negative scores	0	0.01	0.01	-2.5	0.001
	Positive scores	4	5.00	20.00		
Social interaction and participation skill	Negative scores	0	0.00	0.00	-2.6	0.001
	Positive scores	2	5.00	20.00		

It is clear from the previous table that there are statistically significant differences at the level of 0.001 between the average scores between the pre-test and the post-test for the social skills scale for the first axis of verbal communication skills. The value and level of significance was 0.001, and the Z value, as a non-parametric method to identify the significance of the differences between the averages of the scores, was (2.5) - that is, statistically significant.

As for the second axis, related to the skill of social interaction and participation, the statistical analysis showed statistically significant differences at the level of 0.001 between the average scores of the child's scores between the pre-application and the post-application. The value of Z was (-2.6) and the differences here were in favor of the higher arithmetic mean, which is the post-application, meaning that the scores of the child in the study sample in the post-application on the social skills scale were higher than his scores in the pre-application.

**Table (4):** Significance of the differences between the average scores of the sample's scores before and after implementing the program on the social skills scale.

Scale	Group	n	Scores Average	Total Scores	Z	Significance Level
Social skills scale	Negative scores	0	0.01	0.01		0.001

Positive scores	4	5.00	20.00	-2.4
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It is noted from the previous table that there are statistically significant differences in the entire scale between the pre-test and the post-test. This is confirmed by this hypothesis of the research, which is that the training program based on music has proven its effectiveness in improving the social skills of the child with autism (M.S.), the research sample. The research focuses on the two axes of the study, which are developing verbal communication skills and the skill of social interaction and participation, which was observed by the four participants in implementing the program in addition to the researchers.

**Chapter Five: Discussion of results and recommendations**

**First: Results discussion**

The first research hypothesis states that: There are no statistically significant differences between the pre-test and the post-test of the music-based training program on the scale of social skills in the verbal communication axis for the research sample. To verify the validity of the hypothesis, the Wilcoxon test was used to indicate the differences between the means for small samples, and the results showed that there were statistically significant differences at the level of (0.01) between the average scores of the scores between the pre-test and the post-test of the social skills scale on the first axis of verbal communication skills, where The Z value was (-2.5) at a significance level of (0.01), i.e. statistically significant.

This means that the level of verbal communication skills improved by significant degrees in all items of the social skills scale (Axis: Verbal Communication Skills), which is represented in using language by asking for things, answering questions, expressing his needs, understanding what is being said to him, in addition to naming objects and others around him. This result is consistent with the findings of Al-Khairan's study (2011): There are statistically significant differences at the significance level of 0.05% between members of the experimental group and members of the control group in post-performance on the verbal communication rating scale in favor of the experimental group. There are statistically significant differences at the significance level of 0.05% between members of the experimental group and members of the control group in post-performance on the social interaction rating scale in favor of the experimental group.

The results of the first hypothesis of the current research also agree with the results of the study of Muhammad and Ezzat (2008): they presented a music therapeutic program to develop and improve the linguistic development of children with autism. The results of this study showed the effectiveness of the music therapy program in developing the linguistic development of children with autism.

In the same context, the result of the first hypothesis is consistent with the study of Amin and Azaz (1998): they tried to identify the effect of using music as a specific means to develop some skills for an intellectually disabled child. The study resulted in the development of reading skills. The children were able to extract sound while singing, improved their pronunciation of letters, and improved their pronunciation of words.

As for the second hypothesis of the research: which concerns the axis of social interaction and participation skill, the Wilcoxon test showed that there were statistically significant differences (0.001) between the average scores of the child (M.S.) between the pre-test and the post-test, where the Z value reached (-2.6), The differences here were in favor of the higher arithmetic mean, which is the post-application, and this can be interpreted to mean that the proposed program based on music benefited from the importance of musical activities, and it developed in the child (M.S.) positive behavior towards others, so the child (M.S.) developed positive behavior towards others, as he began to participate with his classmates in singing and playing and got to know his teachers. A kind of familiarity occurred between him and the researchers despite not being present in the first sessions. It was also noted that signs of

enthusiasm and joy appeared on the child's face. He began to build friendships with his classmates. This is confirmed by the study of Shore (2002), which attempted to identify the effect of music therapy on autistic children. The results of the study showed an improvement in communication and social interaction among the experimental group, and that the use of musical instruments by children with autism led to an increase in their social interaction and ability to communicate.

The result of the second hypothesis of this research also agreed with the study of Lyons (2008): This study aimed to develop the social communication skills of the autistic child, such as the skill of mingling with others in a meaningful way, forming friendships, self-regulation skills, visual communication, social interaction and participation, by using the program It is based on playing with peers, and the results indicated a slight improvement in the child's linguistic communication and social skills.

Finally, regarding the third hypothesis of the research: which is that the training program based on music helps in developing the social skills of the autistic child. The research sample focuses on the two research axes: improving verbal communication skills, and the second is improving the skill of social interaction and participation. We find that by verifying the first and second hypothesis of the research, the third hypothesis of the research gets verified. The results of this research confirmed that training programs, whether based on music or other training programs based on group activities, would bring about a significant improvement in compatibility with oneself and with others. Musical activities develop acceptable social behavior for the child with autism, free him from selfishness and aggression, make him closer to the individuals around him, and most importantly, relieve him from his sense of shyness and introversion. Thus, the third hypothesis of the research is achieved and is consistent with the study of Wolfberg (2014), which presented a program aimed at developing social skills and social interaction skills in children with autism through group play, Which includes various group play activities such as art, music, drama, and symbolic and imaginative play through group play with peers.

#### **The research results can be summarized as follows**

1. There are statistically significant differences at the level of (0.001) between the pre- test and the post-test of the training program on the scale of social skills in the verbal communication axis for the research sample.
2. There are statistically significant differences at the level of (0.001) between the pre- test and the post-test of the training program on the scale of social skills in the social interaction and participation axes for the research sample.
3. The music-based training program is proved to be effective in improving the social skills of the research sample.

#### **Second: Recommendations**

Through the results of the current research, a set of educational and psychological recommendations and applications can be relied upon as follows:

1. Educating parents on how to deal with children with autism through guidance programs and musical activities at home, as well as participating in the guidance programs offered to their children and being a part of them.
2. The necessity of developing various training programs that help develop the social skills of children with autism and participating in them in autism centers and schools.
3. Organizing workshops and training courses for teachers, administrators, and students about the nature of autism and how to deal with children with autism, especially in schools that implement integration.
4. Conduct a statistical survey that reveals the prevalence rates of autism in the United Arab Emirates

and the Arab world and intensify efforts to unify the provision of appropriate services to reduce and prevent autism disorder.

5. Organizing activities and events that take into account individual differences among children, and inviting children with autism to participate and integrate with normal children.
6. Issuing bulletins and programs in the media explaining how to deal with children with autism.

### **Third: Proposed research and studies**

In light of the results and recommendations of the research, the researchers suggests the possibility of conducting further research and studies in the field of autism and applying various training programs, so that light can be Theyd on many aspects and dimensions related to this topic.

### **These research and studies can focus on the following**

- 1) Survey studies and research on cases of autism disorder in the United Arab Emirates, due to the lack of studies in this regard in the country, as these studies and research would know more data about autism disorder and provide a more effective service for these children, as well as its prevention.
- 2) A comparative study between the effect of a general training program and a long-term music-based training program with a larger sample of no less than (25) autistic children.
- 3) Conduct a music-based training program to improve non-verbal communication skills in autistic children.

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## Appendices

### Appendix (1): Social skills Scale.

Pre/post social skills scale model				
The skills to be assessed		Degree of occurrence		
The first axis: verbal communication skills		It always happens	Sometimes it happens	It rarely happens
		3	2	1
1	Say at least an intelligible word.			0
2	He pronounces some syllables in response to another person.			
3	He pronounces three names of his body parts.			
4	He can specify his gender when asked whether you are a boy or a girl.			
5	He mentions the name of his teacher or mentor.			
6	He can recognize and pronounce letters.			
7	He can repeat what he or she heard from the teacher.			
8	Remember the numbers (1-10)			
9	Can name three colors, for example (red- yellow- blue- green)			
10	When asked, he makes a noise instead of responding with words.			
11	He uses the word yes or no.			
12	Imitates adult voices immediately after hearing them.			
13	Conveys a simple verbal message to others.			
14	Can ask questions starting with (where – why- how - what).			
15	He has the ability to tell a little story.			
16	He remembers his date of birth when asked about it.			
17	He mentions the name of a TV series when asked.			
18	He apologizes for his unintended mistakes by saying sorry or forgive me.			
19	He takes the initiative to speak to the person in front of him.			
20	In his words, he uses the definition “the”.			
21	Clearly pronounces “hello”			
22	He has the ability to tell a long joke.			
23	Answers the phone in an appropriate manner.			
24	Takes the initiative to contact others using the phone.			
25	He says please when he asks for something.			
The second axis: the skill of social interaction and participation		It happens all the time	It happens sometimes	It happens rarely
		3	2	1
				0

26	He asks for help from those around him when needed.
27	He does not withdraw from social situations and does not appear uninterested.
28	It is not easy for him to interact in routine and typical activities.
29	He forms new friendships with those around him, and my friend says his name is "so-and-so".
30	He fulfills the orders and instructions requested from him.
31	He approaches his colleagues when they approach him.
32	He does not get emotional or angry quickly.
33	He cooperates with others when asked to do so, such as playing, cooking food, or growing plants.
34	He doesn't show annoyance when someone touches him.
35	He loves to go out and not be isolated.
36	He accepts people he is familiar with.
37	Responds to loud noises around him.
38	Can perform independent skills.
39	He likes to listen to music or a specific instrument.
40	He tends to be attached to his parents.
41	He uses body language, indicating rejection or approval with his hands.
42	He does not react aggressively to things around him, such as breaking a toy.
43	He shows signs of joy and happiness when playing with his peers.
44	He is selfless and does not refuse others to participate in his game.
45	He is fascinated by seeing fireworks or television scenes.
46	He does not hurt others when they talk to him.
47	Does not have stereotypical movements such as "hand flapping".
48	Listens to verbal instructions or motor gestures.
49	He thanks and shows gratitude when someone offers him something nice, such as a cup of ice cream or a toy.
50	He performs acceptable actions to attract the attention of others.