

# The Use of Music Therapy to Improve Non-Verbal Communication Skills for Children with Autism

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**Abstract**—The number of school-aged children with autism in Indonesia has been increasing each year. Autism is a developmental disorder which can be diagnosed in childhood. One of the symptoms is the lack of communication skills. Music therapy is known as an effective treatment for children with autism. Music elements and structures create a good space for children with autism to express their feelings and communicate their thoughts. School-aged children are expected to be able to communicate non-verbally very well, but children with autism experience the difficulties of communicating non-verbally. The aim of this research is to analyze the significance of music therapy treatment to improve non-verbal communication tools for children with autism. This research informs teachers and parents on how music can be used as a media to communicate with children with autism. The qualitative method is used to analyze this research, while the result is described with the microanalysis technique. The result is measured specifically from the whole experiment, hours of every week, minutes of every session, and second of every moment. The samples taken are four school-aged children with autism in the age range of six to 11 years old. This research is conducted within four months started with observation, interview, literature research, and direct experiment. The result demonstrates that music therapy could be effectively used as a non-verbal communication tool for children with autism, such as changes of body gesture, eye contact, and facial expression.

**Keywords**—Autism, non-verbal communication, microanalysis, music therapy, school-aged children.

## I. INTRODUCTION

THE number of children with autism in Indonesia has been increasing. Based on the result of *Badan Penelitian Statistik* research, the number of children with autism in Indonesia has been increasing up to 140,000 since 2010 to 2016 [14]. Those children who were diagnosed as autism are under 17 years old. The researcher found it is necessary to do a music therapy research as a treatment for children with autism.

Music therapy in Indonesia is also a new field. Therefore, the readers are expected to know more about music therapy and how to obtain benefits from music therapy, especially for children with autism.

### A. Communication Skills of Children with Autism

Non-verbal communication has been an important part of human life [5]. A mother and her child have created a form of non-verbal communication from the sense of touch, voice, and vision since the baby was still in the womb. When the baby is born, they try to find their parents' voices and build eye contact with them [12], [13]. Autism spectrum disorder

impacts through the lack of communication skills [4]. Children with autism have a lack of social skills and problem-solving skills [4]. The communication issues which are commonly found include a non-verbal behavior issue, lack of friendships, inability to share emotions, inability to give a response to any situation spontaneously, and inability to understand other people's feelings. Children with autism experience difficulties in imitating body gestures and using body gestures while communicating with others [4].

There are four stages of communication development for children with autism [11]. The first stage is the Own Agenda Stage. Children at this stage are more likely to play alone and have no interest to interact with their surroundings. The second stage is the Requester Stage. Children at this stage start to realize that their behavior could impact to others. The third stage is the Early Communication Stage. Children at this stage start to use a communication form only to fulfill their needs. The last stage is the Partner Stage. Children at this stage have the initiative to start a communication form. They can show it with eye contact, body gestures, and expressing their feelings. Each child has a different amount of time to reach this long-term goal.

### B. Music Therapy for Children with Autism

Music has been a part of human life, even since babies were still in the womb. A baby learns to recognize their mother's voice and movement. Babies are also very sensitive and responsive to rhythm, gesture, vocalization, timbre, tempo, and audio volumes.

Children with autism can give more responses to music than to the other aspects [3]. Music therapy has been proven to be a good and effective treatment for children with autism. It is effective to improve verbal and non-verbal communication skills, cognitive skills, behavior skills, social skills, motoric skills, joint attention skills, body awareness, emotion regulation, and self-concept. It also helps to reduce anxiety, repetitive behavior, tantrums, and hyperactivity [3].

Based on researches that have been done previously, children with autism are able to remember melody very well, recognize some classical pieces, and have the interest in musical activities, such as singing, song listening, and instrument playing [6]. It also shows that children with autism can imitate a piano playing better than normal children. Music can be a supportive tool for children with autism to learn non-musical things [6].

Children with autism show a better musicality and obtain more benefit from it. They can relate their needs of something structural from music elements, such as melody, harmony, rhythm, sentence, and dynamics [12].

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There are nine characteristics of music as therapeutic tools [7]. As the author points out, music can keep attention, music has structure, music is success-oriented, music can create a good social space, music is fun and has a repetitive structure, music gives a chance for a child to control their surroundings, music helps to create and expand the routines, music is a media to reflect and adapt to each other, and music can be created and used anywhere.

A client and a music therapist create a form of communication by playing instruments and improvising. Through the musical activities, the client and the music therapist create a space as a non-verbal communication form which can be filled with various tempos, dynamics, intonations, phrasings, rhythms, and melodies. This improvisation activity does not sound like jazz improvisation, but it creates a good space for children with autism to express their thoughts and feelings [8].

Music is a good communication tool for people who do not communicate verbally [1]. A client can also give a better response to music therapy than to other forms of therapy because it does not need any verbal communication form. The non-verbal characteristics in music can build a good relationship between the therapist and the client who avoids too much verbal communication [10].

## II. METHODS

The samples taken are four school-aged children with autism in the age range of 6-11 years old. The research was conducted once a week within three months at an inclusive school in Tangerang, Indonesia. The duration of each session is 45 minutes. The assessment is done to figure out the needs of the client, and includes interview, background history review, and running assessment.

The interview is done with the teachers at the school who interact every day with the children in the class. The whole of the music therapy sessions are recorded in the form of video.

The video recordings are analyzed using microanalysis technique which is divided into sequential four steps [9]. The first step is observing the data from the bigger picture. The bigger picture here means 45 minutes in each session. The second step is minimizing the data to episodes. Episodes can be a musical activity, such as playing instruments or improvisation. The third step is analyzing the progress of the music therapy session from the words that the clients try to say or any simple form of non-verbal communication. The last step is analyzing the significant moment. The significant moment is the simplest progress which appears. It can be the emotional changes, facial expressions, or eye contact.

## III. RESULTS

### A. Client D

Client D was already at the requester stage when the assessment was conducted. He showed a non-verbal communication form only when he needed something. Client D observed what the therapist did, but did not show any interest in joining the therapist. Client D has improved to the

early communication stage in the second and the third session. He showed body gesture as a form of interest in what the therapist did.

Another improvement was made in the fourth meeting. At minute 10:30-11:30, client D showed a non-verbal response actively. The therapist asked the client to sit on a mat and hold on to a djembe. The therapist and the client sat down on the mat opposite of each other. The therapist began to sing the client's favorite folk song accompanied by the hand clap gesture. The title of the song is "Look at My Garden". The client showed much more initiative, eye contact, facial expressions, and focus while singing this song.

In the first 32 seconds, the client often stared at the djembe, following the therapist's hand gestures. In the next 28 seconds, the client stared more at the therapist than at the djembe. The eye contact started to improve from second 38 to second 60. The client also smiles more from second 49 to second 53.

When the therapist repeated the song, there were 5 seconds between second 4 to second 9 when client D lost his focus. At this point, he laid his body on the mat. But by second 10, client D could return his focus to the therapist and got back to the seated position. This significant moment has shown a great initiative of client D to musical activity.

The structure and the rhythm pattern of the song have drawn his focus and attention to interact with the therapist. The steady rhythm pattern created a good space for the client to feel comfortable in responding to the therapist non-verbally. He smiled and stared at the therapist much more than in the previous meetings.

Client D also showed improvement in the fifth meeting from minute 16:07 to minute 17:07. Still using the same song, client D was permitted to sit freely. The therapist sang the song as well as played the guitar. Client D could not stop moving around the room. But at second 27, second 28, and second 57, client D responded to continue the song through the empty lyrics prepared by the therapist for him to fill. He did not sing the lyrics correctly; instead, he hummed with the correct pitch. He also tried to make eye contact with the therapist while he was trying to respond to the blank lyrics. This interjecting technique gives a chance for the client to think and respond to an interaction [7].

The significant moment which happened above shows that client D has reached the partner stage. He could initiate to communicate non-verbally by himself. His ability to keep the eye contact and facial expression has improved as well.

### B. Client G

In the beginning, client G was not able to show any interest or respond towards the therapist's musical instruction. He only obeyed what the therapist asked him without showing any non-verbal responses. Client G was at the own agenda stage during the assessment. He finally reached the early communication stage since the third meeting.

One of the significant moments occurred from minute 13:20 to minute 14:20 in the fourth session. The therapist asked client G to improvise on a glockenspiel. Client G held the first stick, and the therapist held the second stick. Client G tried to

imitate the therapist's playing, but suddenly he began to behave hyperactively and uncontrollably from second 19 to second 54. The therapist did not make any sudden or panic movement due to this tantrum. The therapist kept playing the glockenspiel and waited for client G to get back his focus. This grounding technique expects the therapist to act as an anchor for the client who behaves uncontrollably [12].

From the second 19 to the second 37, client G moved his body hyperactively, but he still held on to the stick. From the second 38 to second 55, client G began to calm down. He still did not regain his focus but the uncontrollable movement had begun to decrease. At second 54, the therapist called his name accompanied by the glockenspiel. At second 55, client G regained his focus and started to show engagement to the therapist at second 56. At second 57, he could imitate the therapist's glockenspiel playing.

A tantrum is an uncontrollable behavior which commonly happens to children with autism. By playing the glockenspiel steadily while the tantrum happened, the therapist stimulated client G using melody repetition and rhythm structure to get his focus back.

Non-verbal communication between the therapist and the client can be built through the improvisation technique by imitating each other's way of playing instruments [12].

Another significant moment which occurred to client G took place in the fifth meeting from minute 08:30 to minute 09:30. This time, the therapist asked client G to do rhythm improvisation with the djembe. Both the therapist and the client sat down together on the mat. The therapist's left hand lifted up the djembe, while the right hand hit the djembe. Client G was able to imitate the rhythm pattern, but after 8 seconds, client G started to find something interesting about the djembe. He started to cover and uncover the bottom part of the djembe and figured out the difference of the sound produced by the djembe. He smiled in 40 seconds and stared at the therapist for 3 seconds from second 37 to second 39. He had never shown any eye contact like this since the very first assessment meeting.

The change of djembe sound stimulates client G to express his interest in something. It also stimulates him to start eye contact with the therapist. Client G had never shown any responses like this in previous meetings, in which he used to just hum and stare at the ceiling.

The significant moment above appears in the early communication stage. Client G has understood a non-verbal communication form, but his intention was only to fulfill his needs to hear the change of djembe sound.

#### *C. Client M*

Client M was quite cooperative in the very first meeting. When he sat together with the therapist on the mat, client M did not want to sit opposite, but instead wanted to lay his body on the therapist. He felt comfortable and secure having physical contact with the therapist. Whenever the therapist tried to pull away from client M, he would force the therapist to stay close to him. This sitting gesture continued in the second meeting. This shows that client M was at the requester

stage.

In the second meeting, the therapist tried to create an activity that might help client M to change his sitting position.

The significant moment occurred from minute 19:50 to minute 20:50 in the second meeting. There was a change of behavior in client M's non-verbal communication when the therapist allowed him to hit the tambourine with the glockenspiel stick. Client M was able to play the instrument really loudly for 30 seconds. He also smiled a lot while striking the glockenspiel stick and looked much happier than before.

In this second meeting, client M did not force the therapist to sit close to him anymore, but he still sat behind the therapist. At second 10, he began to change his sitting position facing towards the therapist. He also made an initiative to hold the bottom part of tambourine while he was hitting it. At second 21, client M hit the tambourine and accidentally cracked it. He suddenly stopped his playing and stared at the therapist for 2 seconds to see whether or not the therapist was upset with him. The therapist tried to accept and forgive him by holding the bottom part of the tambourine, so the skin would not be cracked anymore. The therapist also asked the client G to hit the tambourine again.

The significant moment above shows that client M has reached the partner stage. He was able to communicate his feelings by playing the tambourine. He also seemed to feel guilty when he accidentally broke the tambourine. This was shown through his eyes and facial expression.

Client M showed deep eye contact when he hit the tambourine loudly. That dynamics change shows his non-verbal expression [2].

#### *D. Client S*

Client S was at the requester stage during the first assessment. He responded to any form of communication by only smiling. He never tried to engage in any form of communication. In the fifth meeting, client S showed a significant moment from minute 04:20 to minute 05:20 when the therapist asked him to improvise by using a guitar. From second 3 to second 7, client S was able to keep eye contact with the therapist and smile. In previous meetings, he used to run all around the room and ignore the therapist; however, with the guitar improvisation, client S could sit still for 84 seconds.

The phenomenon above shows that client S has reached the partner stage. He finally succeeded to communicate his interest in guitar improvisation. Client S loves the sound of the guitar and wants to explore the guitar. While the therapist was improvising, client S smiled a lot and could manage eye contact for 4 seconds.

#### IV. CONCLUSION

This research shows that the improvement of the non-verbal communication skill of children with autism can be reached after five meetings of 45 minutes duration per week on average through musical activities, such as singing, instrument playing, and improvisation. However, the improvement also

relies on the therapeutic bond between the therapist and the client.

The use of music therapy could stimulate the response of children with autism. The impact could appear in many different aspects positively. Music can be used as a good space for communication and expression to improve social skills. The structure in music is also a good space for children with autism to express their feelings more freely. Singing a favorite song together could be a good way to express feelings and initiate communication. Playing instruments could also support the social skills of children with autism as a form of non-verbal communication. Improvisation is also a good media to form direct communication which can improve the social skills [7].

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