

ADAPTATION OF SOUNDPAINTING TO MUSIC THERAPY FOR ADULTS WITH INTELLECTUAL DISABILITY



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Abstract

During the past five years, music therapy research for people with intellectual disabilities has focused mainly on developing social skills in children and adolescents. Still, only a few studies related to young patients and adults can be found in the discipline's main scientific journals. This paper features an intervention project in music therapy based on the adaptation of Soundpainting –composition and improvisation technique– for its use in group sessions with adults with intellectual disabilities. It results in the Conductor's Game, which is divided into two levels –basic and advanced– for patients with moderate to severe disability. Four main goals are worked on through this activity: self-perception and self-confidence, communication skills, creativity and the patient's wellness. Due to the short scope of the project –based on five sessions–it constitutes a starting point for studying the benefits of musical improvisation in adults with intellectual disabilities.

Keywords: Music Therapy, Intellectual Disability, Soundpainting, Musical Improvisation

BACKGROUND

According to the DSM-5 Diagnostic Criteria Reference Guide (2014), intellectual disability is one of the neurodevelopmental disorders, along with other neurodevelopmental disorders. It is "a disorder that begins during the developmental period and includes limitations of intellectual functioning as well as adaptive behavior in the conceptual, social, and practical domains."

To diagnose an intellectual disability, three conditions must be met:

1. Impairments of intellectual functions are confirmed after a clinical evaluation.
2. Behavioral deficiencies prevent the individual from meeting developmental standards. Without ongoing support, these deficiencies delimit the functioning of everyday life.
3. These deficiencies begin during the development period.

Music Therapy and Intellectual Disability

Intellectual disability can be addressed from music therapy based on two models: the biomedical model –which considers it as a chronic disease– and the developmental model –which treats it as a diversity of the human experience, giving society the responsibility for this group to participate in it (Lee, 2016). Today, numerous studies support the effectiveness of different ways to improve the well-being of people with intellectual disabilities. Models of

active music therapy based on improvisation stand out, as well as interventions through singing and vocalization (Bingham, 2022).

Music therapy began to be used with people with intellectual disabilities in the mid-twentieth century in the United States (Lee, 2016), with the aim of "aiding the development of language, motor skills, and social competence." Following the developmental model, music therapists began to look to these patients for emotional response, memory stimulation, communication, and social and motor skills. Valverde and Sabeh (2011) group the objectives of music therapy for people with disabilities into five categories:

Social and Emotional Behaviors

Structured group music therapy activities can help people with intellectual disabilities gain social skills, incorporating movement, songs, and rhythmic activities as stimuli. To work on emotional development, musical identity will act as a great developer of recognition and expression. It is in this area that the importance of group therapy for people with intellectual disabilities should be highlighted for four main reasons: support, self-disclosure, psychological work and learning from others.

Motor skills

Continuing with the activities that use music as a stimulus, there are those for the acquisition and improvement of motor skills. Through free or guided movement, patients will be able to explore their own body: laterality, directionality, flexibility, agility and motor skills. On the other hand, rhythm stands out for its great power to provide energy, stimulate and organize body movements, and increase the patient's confidence, self-esteem, and self-perception (Sánchez-Menárguez, 2015).

Communication Skills

Some of the most limiting issues for people with intellectual disabilities – at the severe and profound levels – are the need for a high range of support, the limitation in communication skills, the peculiarity of their vocalizations and gestures, and the quirks of their social behaviors. For these reasons, they have great difficulty interacting with other people and their life development is typically solitary, unaware of others and dissociative. However, through sound and its components, a therapist can help a patient develop expressive, receptive language, communicative intent, and the ability to follow directions. Music becomes an ideal means of communication to work on communication in a reciprocal therapeutic relationship (Swaney, 2020).

Enhancement of the cognitive area

Because of the difficulty in filtering relevant stimuli, people with disabilities often have difficulty paying attention to a task. Musical games that consist of repeating sounds or following instructions based on songs can be very effective for the enhancement

of the cognitive area, which will result in an improvement of attention. Likewise, musical instruments with different musical functions assigned to them can also be a focus of attention through simple and direct instructions without fear of repetition.

Music as a leisure activity

Finally, you can't forget the playful part of the music. In fact, music therapy needs to encourage people with intellectual disabilities to use music in their free time for entertainment.

El Soundpainting

Soundpainting is a universal gesture technique for live multidisciplinary composition. In it, there is the figure of the soundpainter –the composer– who communicates with the group through different gestures, thus indicating the specific and/or random material to be made. Music is created in real-time, which requires "a high ability to compose and adapt to what is happening in the moment." Currently (2024) it is made up of more than 1,500 gestures, which answer the four questions of action: what, how, who and when.

The technique of Soundpainting was created by Thompson in 1974. That same year, he formed his first orchestra in Woodstock (New York), with which he began to use some of the basic gestures that would later become Soundpainting. Today, Soundpainting is considered a "living and growing" language (Thompson, 2024).

This technique involves a structured code of signals in order to develop the interpretation. In general terms, we can say that the syntax of soundpainting follows a pre-established organization to indicate who should participate (identifiers), what they should do (content), how they should intervene (modifiers) and when they should do it (entries). In addition to these are the modes (specific parameters for the execution) and the palettes (giving input to specific fragments previously tested). The gestures used to provide these indications are separated into two basic classes: Function Gestures and Sculpting Gestures—the first ones mark who will make the material and when they will start executing it. The latter indicates what type of material will be made and also how it will be made (Thompson, 2006).

Music Therapy, Musical Improvisation and Soundpainting

"Improvisation is to music what talking is to language, the most direct tool of expression and communication." Expressing oneself through music means communicating a message through elements that form a meaningful code. Thus, talking with music is improvising, an activity "that involves freely expressing the elements that make up the musical language through the instrument" (Juanals, 2023). In the field of music therapy, improvisa-

tion is closely linked to creativity, one of the main objectives of working with people with intellectual disabilities.

Òscar Vidal, in his doctoral thesis, *Composing with Soundpainting in the Music Classroom* (2020), states that real-time composition and improvisation exercises – such as Soundpainting – are a challenge and an act of trust in oneself and others. Improvisation "is a cognitive activity that occupies a transcendent place and demands initiative, imagination, originality and reflection." It is an inherent element of the creative experience and a fundamental component for the development of creativity. It has the power to transfer artistic skills to more lasting ones: concentration, respect, self-confidence and perception of oneself and the environment.

"People with intellectual disabilities who have had few opportunities to share aspects of their own identity are at high risk of losing their sense and perception of themselves" (Toolan and Coleman (1996, cited in Swaney, 2020). To pursue the goal of self-perception, it is necessary to create opportunities for a connection in which the verbal takes a back seat.

In the context of creation through Soundpainting, despite the existence of a soundpainter – the composer, the leader – composition inevitably arises from the collaboration of all the members of the group, as "it requires improvisation procedures associated with many of the indications that the soundpainter constructs" (Vidal, 2020). Thus, all the members of a group music therapy session will work on creativity, not just the patient who is acting as a leader.

MATERIALS AND METHOD

To work on all the objectives mentioned above, an intervention is proposed that consists of an adaptation of the Soundpainting technique for music therapy with adults with intellectual disabilities, based in turn on the methods of active music therapy and improvisation. It translates into an activity called the Conductor's Game. In it, all the patients participate actively: one of them –the one who performs the function of an orchestra conductor– as an improviser and musical composer, and the others –those who are part of the group– as performers and creators of music.

One of the main obstacles encountered when it comes to adapting the Soundpainting technique to music therapy is the complexity of the gestures that make it up. For this reason, the first step consists of a selection of those considered essential for musical creation and a division into two levels: basic and advanced. The basic one is designed for people with moderate/severe disabilities, and the advanced one is designed for people with severe/profound disabilities. It will always be the music therapist –who knows the group– who determines which level best suits the group of patients with whom they are working. If there are

individuals from the two different levels, they all perform the basic.

Basic Level

After having taught the gestures to the group, the ideal for the development of the Conductor's Game at its basic level is the presence of two therapists, one who accompanies the patient who is in the center of the circle and another as a co-therapist who performs a musical base with a polyphonic instrument such as the guitar or the piano during the moment of musical creation by the patients.

Table I.

Base-level emotes from the Conductor's Game.

Gesture	Explanation
Hand pointing	Touch. Only touch whoever is being singled out and as long as they are being singled out. You can point to one with each hand, so you'll only be able to play one or two at a time.
Pick up the sound	Stop playing. All the people who are touching stop playing when the patient director performs this gesture.
Waving or waving your arm in the air	Touch them all. As long as the patient director is waving his arm up – within his means – everyone plays.
Raising or lowering the arm while pointing	Volume. When pointing, the position of the arm will indicate the volume. The higher the arm, the harder it should be played. You can make crescendos and decrescendos, in fact, it's positive to play with dynamics.

Note: This table shows the four gestures that make up the basic level of the Conductor's Game, considered the basic ones for musical creation based on Soundpainting.

Advanced level

In this case, only one therapist is needed to carry out the activity since patients are considered more autonomous, and a musical base is not necessary. However, it can be introduced at the discretion of the music therapist.

Participants

The test sessions of the Conductor's Game have been carried out during the External Internships for the Master's Degree in Music Therapy of the International University of La Rioja (UNIR), carried out at the Association for the Disabled of Colmenar Viejo (ASPRODICO), located in the Community of Madrid and supervised by the music therapist Beatriz Amorós. There were five sessions developed over three weeks with a group of six young people and adults – between 18 and 50 years old – with intellectual disabilities. During the sessions, they were divided into two groups, according to their limitations: basic – designed for people with a higher level of disability – and advanced – for patients with a milder level of disability.

Table 2.

Gestures from the advanced level of the Conductor's Game.

Gesture	Explanation
Hand pointing	Play. Only touch whoever is pointing at it with the index finger of either hand. You can point to a person with each hand. Tap until prompted to stop.
Pointing with index finger and talking/singing gesture	Sing. The patient director points to a person while, with the other hand, he makes a gesture of talking/singing. You will need to do this until you are told to stop.
Waving or waving your arm in the air	Play them all. Everyone plays when the patient director performs this gesture. They must tap until instructed otherwise.
Delimit a section of the group	Tap the section of the group that is marked. At the advanced level, the gesture of pointing to two people is differentiated from that of delimiting a section of the group. The difference lies in the position of the fingers. In this case, they should all be stretched out.
Raising or lowering the arm while pointing	Volume. When pointing, the position of the arm will indicate the volume. The higher the arm, the harder it should be played. You can make crescendos and decrescendos, in fact, it's positive to play with dynamics.
Gesture of picking up the sound	Stop playing/singing. All the people who are touching stop playing when the patient director performs this gesture.

Table 3.

Description of the members of the group of patients: initial, age, aspects to be worked on and level.

Patient	Age	Main aspects to be worked on	Level
G	18	Verbal and non-verbal communication Self-perception and emotional management Attention	Basic
M	31	Nonverbal communication and eye contact Upper extremity mobility	Basic
P	50	Perception of oneself and the environment	Basic
C	29	Concentration and creativity	Advanced
And	33	Creativity, self-determination and decision-making (avoid repeating or copying what has been established)	Advanced
J	49	Creativity Active Listening	Advanced

Note: Patients are sorted by activity level and then by age in ascending order (from youngest to oldest).

Procedure

To perform the Conductor's Game, first of all, all the patients must be placed in a circle. Everyone should pick up a musical instrument. All the sessions of this proposal have been carried out with patients sitting in chairs. However, their standing or sitting position on the floor can be considered depending on their motor skills or the instruments they are using.

The first step of the Conductor's Game is to teach the gestures to the patients. Depending on the group you work with, the therapist will decide at their discretion how to introduce them: all at once, one by one, two by two, in different sessions or the same one, and so on. In this case, the patients knew most of the gestures, and the new advanced level –singing– was introduced over several sessions for correct internalization.

In the development of the activity, one of the patients is placed in the center of the circle to play the role of "orchestra conductor", soundpainter in this case. Through gestures that they have previously learned from the music therapist, they will communicate with the rest of the group –who will remain seated with their instruments ready– through gestures to create improvised sounds.

Data analysis

To evaluate this project, direct evaluation methods have been used based on observation sheets, annotations of the music therapist in the sessions themselves and analysis of recordings. In addition to the video recording of all the sessions, observation sheets and Likert scales, qualitative and quantitative evaluation methods, respectively, have been carried out.

Video Recording

All five sessions of this project have been videotaped for further analysis. The records have been used to complete the observation sheets after the end of the sessions, as well as to observe and compare in more detail the progress of the patients – especially individually, in relation to communication.

Observation Sheets

The main evaluation system of this project has been the observation and registration sheets, i.e., a qualitative evaluation system. After establishing the general objectives of the project, an observation sheet was created with the specific objectives to be pursued in each session to ensure that the necessary time was dedicated to all the proposed goals.

Using these objectives as a guide, an observation sheet was created for each of the five sessions. Each of them has two versions: a first with the programming designed for the session, with concrete and concise ideas that would serve as a guide for the music therapist, and a definitive one with the notes taken after the session, both from the ideas that arose at the time and after viewing the video recording.

Likert scales

The Likert scales correspond to the quantitative evaluation component that complements the qualitative evaluation of the log sheets. A Likert Scale has been developed individually for each patient and a collective one for the whole group. In this

way, not only will patients be evaluated, but also their functioning as a group.

This study aims to improve the well-being of people with intellectual disabilities after participating in several sessions of music therapy based on Soundpainting. For this reason, the scales will be filled in the first and last sessions for later comparison. In the case of patients who did not attend all the sessions – especially for those who missed the first or fifth session – the first and last sessions they attended will be taken into account.

In addition, it must be taken into account that the values themselves do not count very much, but the difference between them is observed from the first to the last session. Likewise, the characteristics, strengths and difficulties of each patient must be taken into account because, depending on the variable, a two-point progress in one user can be much more significant than a five-point progress in another user, and viceversa.

RESULTS

Individual analysis

After an individualized observation of each of the patients, the impact that the results may have on the quality of life and well-being of adults with intellectual disabilities has been analyzed. Only a maximum of five sessions –not all patients participated in the entire project– have been able to demonstrate the benefits of active music therapy in this group of patients.

An improvisation technique such as Soundpainting is based, in addition to musical creation –creativity– on communication between the members of the group: from the director to the group, from the group to the director and from the members of the group among themselves, without overlooking the communicative bridges established with the therapists. It is, therefore, an ideal tool for working on objectives related to these fields. In addition, this study has also observed the consequences of an improvement in creativity and communication: the increase in self-esteem and self-perception, which will cause patients to acquire autonomy to carry out various tasks, inside or outside the artistic field. Finally, as Valverde and Sabeh point out in their Music Therapy Programme for Ageing People with Intellectual Disabilities (2011), we do not want to leave aside the leisure component that accompanies music, which runs the risk of being left in the background and which is so much needed by adults with intellectual disabilities.

Thus, all patients who attended more than two sessions showed clear improvements in the various parameters to be analyzed.

Group analysis

The indicators of the Likert Scale of group evaluation in the first session are based on a high base since the study works with a cohesive group of patients who have been working with

the same therapist for a long time and whose members coincide in other areas of their day-to-day life and not only in music therapy.

It is also worth noting, in general, the high indicators of the last session. These denote the positive results of this activity and music therapy based on Soundpainting, in the short term. In conclusion, important results could be obtained in the long term by applying musical improvisation activities in group therapy for adults with intellectual disabilities.

In terms of points to improve, the next step would be to work on the creativity aspect at the group level. It would be interesting to work on this aspect with patients at the advanced level; however, working together with patients at the basic level offers such interesting opportunities as help, support and mutual influence. In addition, the presence of the whole group generates a safe space for all patients, which is very necessary for the correct development of creativity. For this reason, and depending on the aspects to be worked on, the activity works in both ways. The following figures show a group analysis, using a Likert scale, of the first and last sessions of the project.

Figure 1.

Likert scale of group assessment of the first session.

Número de sesión: 1		Fecha: 11.05.2023	Asistentes: Básico: G, M, P; Avanzado: C				
Bloque	Logros (colectivos)	1	2	3	4	5	
Creatividad (grupal)	El grupo sigue las propuestas musicales de las terapeutas				X		
	Se muestran satisfechos con el resultado musical			X			
	Innovan en el uso de los instrumentos musicales	X					
Comunicación	Participan activamente en el momento de repasar la actividad y los gestos				X		
	En caso de duda, se ayudan entre ellos				X		
	Están atentos a los gestos y respuestas de los compañeros				X		
Espacio de ocio y diversión	El ambiente de la sesión ha sido distendido, divertido y sin tensiones			X			
	El grupo se ve motivado con la actividad				X		
	La actividad funciona de forma orgánica				X		
Observaciones: En general, todo el grupo se muestra concentrado, motivado y atento a las terapeutas. Probablemente, por este motivo, los signos de diversión son más escasos.							

CONCLUSIONS

First of all, it should be noted that the conclusions that can be drawn after the evaluation of the sessions are partial since, in five sessions, the project has only been able to begin its development and demonstrate its capacity for evolution. Likewise, it is necessary to highlight that during the analysis of the results, improvements could be seen in most of the patients and the goals, despite the fact that the needs on which they have wor

Figure 2.

Likert scale of group assessment of the last session.

Número de sesión: 1		Fecha: 11.05.2023	Asistentes: Básico: M, P; Avanzado: C, E, J				
Bloque	Logros (colectivos)	1	2	3	4	5	
Creatividad (grupal)	El grupo sigue las propuestas musicales de las terapeutas				X		
	Se muestran satisfechos con el resultado musical				X		
	Innovan en el uso de los instrumentos musicales			X			
Comunicación	Participan activamente en el momento de repasar la actividad y los gestos					X	
	En caso de duda, se ayudan entre ellos					X	
	Están atentos a los gestos y respuestas de los compañeros					X	
Espacio de ocio y diversión	El ambiente de la sesión ha sido distendido, divertido y sin tensiones					X	
	El grupo se ve motivado con la actividad					X	
	La actividad funciona de forma orgánica					X	

Observaciones: Es muy posible que gran parte de la subida en puntuaciones sea porque en esta última sesión están presentes todos los pacientes del nivel avanzado, que a su vez hacen de soporte y ayuda para sus compañeros del nivel básico.

ked are very general, that is, self-perception or communication – two of the examples – without applying them to specific contexts or situations.

Finally, and after analyzing the Soundpainting technique, one of the main obstacles encountered when adapting it to music therapy is the complexity of the gestures that make it up. Therefore, at first, it may seem too ambitious for patients to internalize various gestures enough to create music with them in just five sessions. However, in this case, there were months of previous work on this activity, albeit sporadically. Unfortunately, there is no record of these previous sessions.

In conclusion, the ideal scenario would be for these sessions to represent the beginning of a much longer project, several months ahead, even designed for an entire school year. So far, the activity of the Conductor's Game has been focused on learning and internalizing the most basic gestures of musical creation in Soundpainting. The ways to work in case of developing the project in the longer term would be others, such as the development of creativity, musicality, artistic sense, musical expression, the inner child spoken of in the Nordoff-Robbins method, individual and collective artistic identity, etc.

Finally, it is worth highlighting the close relationship between maintaining or improving well-being– one of the main objectives of the project– and fun. The well-being of patients should always be the main goal to follow in music therapy. To do this, the music therapist must take care of two main issues:

- That all patients, on both levels, have a safe space for musical creation as conductors before the group, with

the time they need to generate the movements, the expected response and the support for their realization if required.

- All patients who are part of the group understand the movements so that they can offer a musical response to the patient director.

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