6

REVISTA ESPAÑOLA DE INVESTIGACIÓN EN MUSICOTERAPIA

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THERAPEUTIC BENEFITS OF MUSIC

MARCH 2024

We have already reached the sixth Journal of Misostenido, coinciding with the beginning of the *InvestIgA Program,* called to strengthen the research skills of the students of UNIR's music therapy master's degree with the help of artificial intelligence.

These new tools will allow us to continue betting on the quality and methodological innovation of music therapy research.

After the good reception of the previous issue, we continue the bilingual initiative and reinforce the dissemination of all publications on social networks over the world.

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STAFF

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> Regardless of whether we apply ourselves in the writing of an evaluation report or in a research article, the fact of assessing therapeutic objectives already involves a design of variables, the definition of observation categories

A FOUNDATION FOR ALL

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Russell, in 1948, warned that "all human knowledge is uncertain, inaccurate, and partial." In 2023, Bay is calling for critical thinking as an antidote to any dogmatism. Following this thread, we take the side of research. Without it, there is no music therapy, just as there is no art, literature, journalism, justice or medicine. Music therapy and research are two elements of the same ecosystem. As the tree enriches the earth, it nourishes and sustains it.

Any patient care service that we consider to be of quality is inescapably based on evidence previously studied under a research protocol. Any theory or method validated in music therapy comes from the analysis of intervention cases. This interconnection between action and evaluation requires us to learn and manage cross-competencies. In music therapy, it is necessary to know how to apply therapeutic methodologies while knowing how to handle the resulting information according to the scientific method. There is no room for dogma, and it is open to observation.

Regardless of whether we apply ourselves in the writing of an evaluation report or in a research article, the fact of assessing therapeutic objectives already involves a design of variables, the definition of observation categories and the use of validated scales. At the same time, it requires systematized data collection and the application of an intervention protocol according to the specific needs of a patient. That is, research methodologies have been applied indirectly.

Valuing these skills, learning to objectify observations in a clinical evaluation, instilling a critical and analytical gaze, showing how an experiment is designed, helping to implement scientifically valid programs or defending that music therapy can only be based on evidence are just some of the goals that concern us in this journal and that we share with the subjects of the master's degree in Music Therapy at UNIR: A path of reliability and therapeutic rigor that goes between the acquisition of control tools and the ability to take care of people.

We always insist that the role of the music therapist and that of the one who observes, records, evaluates and describes the results of an experiment is different, although not exclusive. Even though they are other specialties, the former cannot be alien to or be outside the latter procedures. Clinicians must be familiar with the management of databases; they must know how to access bibliographic sources and explore the most current ones using the scientific vehicular language, which is English. This is the only way to avoid partiality, uncertainty and inaccuracy. This is the only way to achieve professional solidity in therapeutic projects and move away from occurrences.

The exercise of this profession requires knowledge of issues such as the neurological impact of music and its physiological, psychological and emotional influence. This brings us closer to understanding the meaning of sound responses, appreciating the contexts in which they arise, and recognizing the meaning of each musical signifier and its therapeutic scope.

Surely, it may seem excessive all this range of skills and knowledge that the music therapist carries along with his instruments if we compare it and return to the media with that sweetened image that they usually spread where music, in hospitals and residences, is played for everyone equally, promoted by the best positioned foundations in the sector.

This type of information, poorly founded, confuses therapy with distraction, therapeutic accompaniment with musical entertainment, and music therapy with musical intervention. Oblivious to the professional reality of music therapy, they ignore the educational effort, the humanistic and musical preparation, the clinical protocols and the responsibility to attend to the individualized needs of people in disease processes.

As optimistic content, it's an ideal filler when the current spectacle falters. They embellish the newsreels well, even if they are hearsay. In the short distance of a hospital bed, everything sounds different, uncertain, inaccurate, and real.

Returning to our topic, the consequences of not investing in research prevent us from operating with the firmness provided by contrasted sources and the criterion of any foundation. Without them, it is unfeasible to practice justice, medicine, artistic creation, music therapy, and, of course, journalism.

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SUMMARY

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MISOSTENIDO
REVISTA DE MUSICOTERAPIA unir

ENGLISH VERSION

#6, 1

MUSIC THERAPY AND TRAUMA IN THE NICU: FAMILY CENTERED MULTIMODAL INTERVENTION

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Abstract
The following intervention proposal in Music Therapy is aimed at parents or caregivers of babies admitted to the Neonatal Intensive Care Unit (NICU). Its objective is to offer them a framework of containment in the face of the traumatic event experienced, favor their psychological well-being and consequently strengthen the bond with the newborn. This multimodal intervention is a complementary support to the RBL method used at the NICU, includes also a group intervention with the GIM method and the creation of a new environmental music model called Birthing Harp. It is an easy-to-implement intervention and a valuable contribution to the humanization of the hospital system.

Keywords: neonatal intensive care unit (NICU), family centered approach, multimodal intervention, Birthing harp, trauma.

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BACKGROUND

There are numerous publications currently on intervention for premature infants in the NICU (Standley, 2001; Haslbech, 2014; Gooding, 2010; Loewy, 2013), but not about the trauma experienced by parents1 during the time spent in it (Loewy, 2021). The present intervention proposal offers a multimodal response to the trauma experienced at the somatic and neurophysiological level by parents in the NICU.

Authors such as Levine (2010), Van der Kolk (2014) and Porges (2011) refer to trauma as a loss of connection with oneself, with one's own body and with the surrounding world. Porges, in his Polyvagal Theory (2011), alludes to the vagus nerve as a fundamental regulator of a large number of functions of the organism. Porges has observed that music and voice prosody can provide direct vagal stimulation that can reduce the sympathetic activity of the Autonomic Nervous System (ANS), leading to the states of overwhelm and disconnection that trauma produces. The Polyvagal Theory is based on the premise that using prosodic vocalizations to activate the muscles of the middle ear contributes to changing the physiological state of the individual by making him spontaneously more sociable. This system of social connection is activated by listening to an extremely modulated and prosodic voice with great variation in pitch, such as when a mother talks or sings to her baby to relax him. It is a model that consists of providing the ANS with acoustic cues that cause safety neurocep-

1. By linguistic economy, in this paper, the term "parents" is understood to refer to both parents, whether the same-sex or heterosexual couple, as well as their caregivers.

tion. This theory confirms neurophysiologically that singing

A preterm clinic is not only a means of mutual communication but also functions as a non-pharmacological emotional regulator that can modify the traumatic experience of the parent-baby dyad in the NICU.

Early Care Models

The experience of having a premature baby can be overwhelming or, as Stacey et al. point out. (2015) a real "roller coaster". Currently, in the NICU, there are two models of an educational and support nature that contribute to reducing psychological distress in parents and establishing the bond of the dyad: the NIDCAP (Newborn Individualized Developmental Care and Assessment Program) and the Kangaroo Mother Method (MMC).

In terms of music therapy, three models are applied in the NICU: Joanne Loewy's RBL (Rhythm Breath Lullaby), Friederike Haslbeck's CMT (Creative Music Therapy), and Jayne Standley's Multimodal Neurological Enhancement (MNE). This proposal will use, among others, the RBL model.

Dr. Loewy's (2021) model is the most comprehensive and up-to-date study of music therapy and trauma in the NICU. Dr. Loewy created an assessment to determine the emotional state of parents, paying special attention to how they perceive emotions in their body and using the so-called Kinship Song (Loewy, 2015) or SOK (Song of Kin). This song refers to the creation of a lullaby from a song of any musical style that the parents prefer. In other words, it is about transforming a favorite and meaningful song into a lullaby by changing the rhythm (from a binary to a ternary rhythm). In addition, in a second instance, a vowel will be chosen to hum the melody, and then a part of the song will be selected to be repeated to be used with the baby eventually. Once the a cappella phrase is entrenched, it is used as a strengthening of the bond with the baby and as a predictable neurological support effect for parents.

After the kinship song, parents are asked to record the baby's heartbeat and this song, known as the Heart Song, is offered with the rhythmic base of the baby's heart modified for this purpose. A stethoscope with a built-in microphone and Garage Band is used for further editing (Schreck et al., 2018). This proposal is very motivating because you can share your baby's heartbeat with family members who do not have access to the NICU, and with relatives who live far away. It is also a tangible memory for life (Van Dokkum et al., 2023), even in the face of the unexpected loss of a baby.

GIM Method

One of the methods of receptive music therapy that has addressed trauma and the body is known as GIM, which stands for Guided Imagery and Music, created by violinist Helen Bonny. This method is based on humanistic psychology and is based on Jung's analytical psychology and Groff's transpersonal psychology (Vilá, 2022).

Through studies with PET scanners, it has been possible to verify that people with post-traumatic stress who have undergone GIM sessions are sensitive to psychophysical musical qualities such as transience and dynamic or rhythmic changes (Bruscia, 2002). They are also sensitive to finely processed elements such as dissonances, harmonic changes, and any element with evocative potential. Consequently, the therapist should minimize the evocation of images, selecting the pieces of music carefully, as well as making the sessions shorter.

To this end, Bruscia (2002) recommends some pieces such as Bach's Air, Vaughan-Williams Rhosymedre Prelude, "Pied en la air" from Warlock's Capriol Suite, Pachelbel's Canon, Vivaldi's Gloria: Et in Terra Pax, Faure's Requiem (In Paradisum) and the second movement Adagio un poco mosso from Beethoven's Piano Concerto No. 5 in E-flat (Op. 73 "Emperor,").

Through music, the therapist connects the patient with their inner world, with their images, offering tools that connect them with their own body, thus processing the trauma through direct memories or metaphors (Story, 2018).

In this method, the creation of a mandala from a circle is used as a mechanism for projection, integration, and emotional expression, which allows the internal experience with music to be consolidated and a bridge between internal experiences and daily functioning is established (Konieczna-Nowak, 2016).

It was precisely Carl Jung (Fincher, 1991) who used the Sanskrit term mandala (etym.: "sacred center or circle") to describe the drawings his patients made. Jung associated it with the Self. For Jung, the mandala circle reflected the containment character of the Self for the psyche's longing for self-realization.

Environmental Music Therapy (EMT)

A TMS intervention is characterized by the intentional use of music or sound in order to modulate a harmful sound environment and turn it into a more conducive one so that it can contribute to the well-being and healing of the listener and even reduce the perception of pain (Rosetti & Canga, 2013), thus creating a kind of containment soundtrack that allows the mood to be modulated. It is a type of non-invasive mind-body intervention (Canga et al., 2012) that takes into account the physical, psychological, and cultural needs of patients, parents, and staff.

The music therapist must be trained to read the body language of the people present, notice facial expressions, perceive "the energy" of the environment, and improvise from the noise present in the environment, for example, the beeping sounds produced by monitors, the noise of fans, a door being knocked on or the footsteps of a doctor.

The Harp in the NICU: The Birthing Harp Model

Back in 2000, Steve Schneider used the percussion dulcimer in his first EMT pilot study with Kristen Stewart in the NICU. Friederike Haslbeck (2020), in her CMT model, currently uses another plucked string instrument, the monochord, in her interventions. McLeod (2018), on the other hand, has used the Reverie Harp with important results in the relaxation of parents and contact with their babies.

Birthing Harp is a model of Harpatherapy based on the improvisation method with the Greek modes of Christina Tourin (2006), the creation of environmental sounds by Marianne Gubri (2023), the pilot study by Stewart and Scheineider (2000), previous studies of TMS, and symbolic studies of Jungian psychology. Birthing Harp proposes the use of the 26 to 34-string harp for the intervention of environmental music therapy in the NICU.

This type of harp is small, lightweight, and easy to carry. This model was created with the intention of functioning as a "sound container" for the trauma experienced by parents in the NICU.

The dulcimer, monochord, Reverie Harp, and harp are plucked string instruments (the dulcimer can also be struck) that are archetypically associated with an angelic sound (Archive for Research in Archetypal Symbolism, 2010). In mythology, the harp (or its sisters, the scepter, and the lyre) was considered an earthly object but a divine creation that closely linked the realm of the material and the immaterial.

From mythology, we know that when Orpheus played the harp, his anguish was appeased. Likewise, angels, like poets, played the harp to express states of beatitude or stormy conflicts. The fluid sound of the harp announces the restoration of the soul and rebirth (Op.cit. 2010). Stewart and Scheineider (2000) also argue how much dulcimer produces an archetypal melody ideal for the NICU environment.

A relevant aspect of the use of the harp in EMT that Stewart, Scheineider, Rosetti, and Tourin highlight is the intention. The energy of intention in the music therapist is very subtle and, at the same time, very powerful (Tourin, op. cit). On the other hand, Rosetti argues for the importance of intentional purpose (op.cit., 2020). Finally, Stewart and Scheineider (op. cit) argue that music and its intention to soften the environment seem to provide a foundation or basis for musical nourishment.

The harp is a very ductile instrument for incorporating new sounds by taking those present in the environment. Using only the palm of our hand on the low strings, it is possible to have the sound of the wind, simulating a NICU fan (Gubri, 2022). By playing a descending second major (A/G), we will have the beep of the monitor that marks the heart rate. From this sound, it is possible to create a melody as a leitmotif following the Mixolydian mode (Tourin, 2016).

o do this, we will put the harp in the key of D Major. If the harp is in C major (with E, A, and B keys raised), the red and blue keys, C and F, respectively, must also be raised (see Figure 1). Then, a melody starting from the A will be improvised with the right hand (fifth note of the Mixolydian mode in the key D Major). In the left hand, the notes of the A chord will be gradually incorporated and then go down to G as an alternate note, also following the G chord with the left hand (see Figure 2). It is important to start with a few notes in the left hand, for example, the tonic and fifth, and then move on to the tonic, third, and fifth arpeggiated notes, as seen below (see Figure 3).

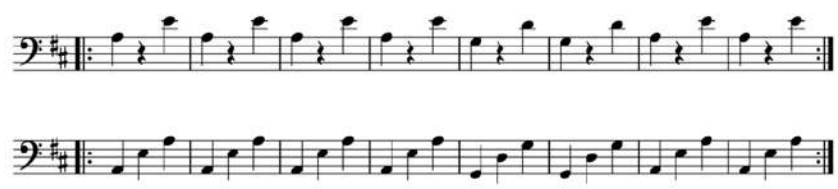
Figure 1.

Harp keys in D Major

Note. Source: Authors' own creation

Figure 2.

Simple Pattern Models for the Left Hand



Note. Taken from Gubri, 2022

Another very common sound in the NICU is that of the monitor in B natural at approximately 55 bpm. Based on this sound, it is possible to improvise in G major or E minor, depending on whether one wants to create an animated atmosphere or a more intimate and reflective one (Tourin, op. cit). If, for a moment, the predominant noise is the footsteps of the medical staff, we can recreate these footsteps by tapping on the box gently with our fingertips. It is also possible to produce an oceanic sound.

As if from the womb, simply going up and down the soundboard with both hands. To all these ambient sounds, it is possible to incorporate sounds of nature, such as birds, by pressing the high notes D and F; the rain, with the harmonics of the middle notes C and G, without forgetting small high-pitched glissandos reminiscent of the sound of a waterfall or a fountain (Gubri, 2022).

Schneider (2000) and McLeod (2018) mention the use of the pentatonic scale for improvisation. On the harp, it is possible to raise the keys D and G and thus obtain what is known as "Angelic Mode" (Tourin, 2016). It is simply a major pentatonic scale

that removes the fourth and seventh degrees of the Ionic mode (see Figure 3). You can create a melody freely by always following the tonic with the left hand and favoring attention to the environment rather than to the instrument since it will not generate any kind of dissonance. Another Greek mode of improvisation with the harp is the Ionic mode. The sweet, light, and reassuring quality of this mode is ideal for the NICU (Tourin, op. cit). To improvise in this mode, you need to use the three related major chords: I, IV, and V. If we use the C clef, the base chord (I) will be C, then the IV chord in F, and the V chord in G, and so on with the other keys you want to play on.

Figure 3.

Harp Keys in Angelic Mode

Note. Source: Authors' own creation

Finally, a relevant aspect is the pulsation. As Schlez et al. (2011) point out, in order for harp music to have a relaxing effect in the NICU, the heart rate should continue to be 60 to 70 bpm. As for TMS, the rhythm of the environment will always be taken and modulated in order to be beneficial for the parents present at the time of the intervention.

The use of the harp in the NICU is very favorable because of its sweet timbre, its ductility, and the sound and harmonic possibilities it offers, and also because its presence brings with it a very strong symbolism that can offer the possibility of channeling traumatic emotions through a solid, predictable and stable auditory container. Thus, as in all mythological subjects, there is an invisible plane underpinning the visible plane (Campbell, 1991). As this author argues, the mind can go astray in strange ways and want things that the body does not want. Myths were a means of putting the mind according to the body. Birthing Harp tries to foster that means of reconnection.

INTERVENTION PROPOSAL

The following intervention proposal is designed to be carried out within the hospital environment of the NICU and in an adjacent room set up for group meetings. The transversal intervention will be carried out in three different spheres: the neonatal sphere, the physical-emotional sphere of parents, and the environmental sphere. A specific type of session will be designed for each sphere.

Objectives of the intervention

General Objective:

Reducing Parent's Stress and Anxiety Symptoms in the NICU

Specific objectives:

- Promote body self-awareness through guided imagery and comment on one's own experience.
- Generate a space for containment, expression, and social connection.
- Promote positive emotions.
- Create and share the Song of King itself among the members of the group.
- Share and comment on the mandala itself among the participants of the group.
- End the session with the perception of serenity and with a smile.
- Promote bonding with the baby.
- Incorporate the sounds of the NICU into the proposed ambient melody.

Beneficiaries

The recipients are mainly the parents of the babies admitted to the NICU and, consequently, their babies. The institution's staff will also benefit from the EMT internship.

Activities & Tasks

1- Neonatal SphereDevelopment of the Individual Session

- Creating the Kinship Song
- Recording of heartbeats
- Post-session editing work and delivery of the material by email to the parents.
- Informed Consent

For this type of intervention, the music therapist will need a guitar, a stethoscope with a microphone, and a computer with a Garage Band. Permission will also be needed for recordings of both the baby's heartbeat and the sessions. This will be agreed in advance with the parents and the hospital.

The individual session will consist of the creation of the kinship song or Song of King. In a second instance, the baby's heartbeat will be recorded[2] and the Heart Song will be offered, with the

2. You can see this process and the necessary elements at the following link: https://www.youtube.com/watch?v=82WXPqEpsYM

rhythmic base of the baby's heart modified. A stethoscope with a built-in microphone and Garage Band will be used for this purpose.

It will be vitally important during the creation of the kinship song to promote the singing of the caregiver who is at that moment next to the baby, to promote direct vagal stimulation, and to begin the process of stress reduction.

2- Physical-emotional sphere of parents or caregivers

Development of the group sessions

The group intervention proposal will be developed over four consecutive weeks. The sessions aim to create a space of containment, emotional and bodily self-awareness, group identity, and artistic expression.

The design of the group sessions follows the sequencing of Mateos-Hernández (2004). An example of the structure of the session is presented, and the music for the three successive meetings is suggested.

Table 1.

Session distribution

Warm-up	5 min.
Motivation	5 min.
Conscious body	5 min.
Perceptual Development	15 min.
Activity of relationship	10 min
Representation and symbolization	10 min.
Actividad de despedida	10 min.

Note: times spent in each phase of the session

Outline of the first meeting:

1. Warm-up (5')

The welcome song is played. Parents will be arranged around a table. On it you will find the instruments and materials for the rest of the session: photocopies and crayons.

2. Motivation for the session (5')

A song is performed, and the lyrics are provided in photocopies. Participants are invited to pick up an instrument and accompany the music therapist if desired.

1st encounter: Coldplay's Fix You (Spanish version): It is a bridge to introspection and an omen to better times to come.

2nd encounter: On the Other Side of the River by Jorge Drexler favors the awareness of personal strength to face the difficulties that arise in life, providing hope beyond the great effort.

3rd meeting: The Force of Life, by Paolo Vallesi: It is a reflection of the experience lived in the hospital, and, at the same time, it brings confidence to one's inner strength.

4th meeting: Color Hope, by Diego Torres, brings an air of hope to one's own lived experience.

3. Conscious body activity (5')

A body scan is proposed through a brief induction that allows connecting with the body itself and the accumulated tensions.

4. Perceptual Development Activity (15')

Guided imagery is introduced with the chosen piece[3]:

1st encounter: Bach Air: it favors opening up to the introspective imagination by gently touching the soul (Bush, 1995).

2nd encounter: Fantasia on Greensleeves, by Vaughan Williams, evokes deep reflections touching very sensitive fibers (Bush, 1995).

3rd encounter: Symphony No. 5: Romance, by Vaughan Williams, evokes depth and provides a confident inner exploration (Bush, 1995). 4th meeting: Green Room, by Wayne Gratz: It can evoke moments of childhood and nature in a very safe way (Vilá, 2022).

5. Activity of relationship with the other (10')

It will be proposed to share the personal experience of guided imagery verbally.

6. Representation and symbolization (10')

Sheets of 32cm x 47cm of paper with a circle in the center (figure 5) and oil crayons were distributed in order to symbolize what was experienced during the session. It can be accompanied by ambient music improvised by the music therapist.

7. Farewell activity (10')

_____

3 Suggested versions:

1) https://open.spotify.com/track/3QOEWKNSNTQK98F8jIwTXU?si=79683496b2034240;
2) https://open.spotify.com/track/7rlH9Vtwdbdxugrl-F31Zxz?si=f1d9192c8f0f4f43
3) https://open.spotify.com/track/2Qd7guepelYtabXLeaT-x53?si=c540a48db6224633
4) https://open.spotify.com/track/1YDchzoNk8pD86S6Si5-ruE?si=3ee826cf34df4b84

Figure 5

Sheet of paper for the mandala

Note. Taken from Vilá, 2022

It is proposed to share the mandala, and the farewell song is sung.

3- Environmental sphere

Development of the session

The development of the EMT session will be within the NICU in the space agreed in advance with the hospital managers. Intervention in environmental music therapy is complex to evaluate. The observation skills of the music therapist are key to intervening in EMT. The variables to be considered will be the following:

- Ambient noises (monitors, fans, staff footsteps)
- Faces and body attitudes of the people present and the emotions they reflect
- Interaction between people present (Rosetti, 2020)
- "Feeling" of the atmosphere (oppressive, tense, relaxed, etc.) (Rosetti, op.cit.)
- Staff working speed
- Any unplanned emergent situation

For the evaluation of emotions, Paul Ekman's (2016) analysis of basic emotions has been followed, extending it with other possible emotions, such as stress and despair (Appendix).

The repertoire will be based on popular lullabies or contemporary/classical melodies transformed into lullabies and improvisations in angelic or Mixolydian mode. These improvisations will begin by recreating

the sounds of the environment and incorporating them into the improvised melody. Likewise, the fundamental focus will not be what is touched but how it is touched and making sure to keep the intentional purpose in mind. The music therapist will mark on the record sheet the melodic motifs and the sources that generate them. Finally, the responses of those present will be noted.

Resources

Sessions will be conducted by a music therapist, preferably specialized in trauma, familiar with hospital contexts, and at least the first level of GIM.

Material resources will depend on the area to be addressed.

- Neonatal sphere: a guitar, a stethoscope with a microphone, and a computer with Garage Band.
- Physical and emotional sphere of parents and caregivers: room adjacent to the NICU, a guitar, instruments of the RBL method (ocean drum and cat box), wooden maracas, oil cakes, sheets of paper, and, if possible, a video camera for the recording of the session.
- Environmental sphere: a harp with 26 to 34 strings.

Evaluation methods

- Neonatal sphere: The emotional and stress state of the parents will be evaluated following Loewy's evaluation (2013). After the session and after the creation of SOK and the recording of the Heart Song, the performance of the session and the necessary observations will be noted on the log sheet.
- Physical-emotional sphere of parents or caregivers: Before the group session, the questionnaire adapted from Loewy (2013) will be delivered and at the end of the session a survey will be provided that reflects the opinion of the group music therapy session.
- Environmental sphere: The events of the session will be recorded in the registration form designed for this purpose.

Registration form

Intervention with the Birthing Harp Model

Date:

Session nº.:

Personas presentes durante la intervención:

❏ father ❏ mother ❏ caregiver ❏ doctors ❏ nurses
❏ cleaning staff ❏ others

Environmental noises from the environment:

❏ monitors ❏ fans ❏ persons ❏others

Present emotional, bodily and/or facial attitudes:

❑ sadness ❑ happiness ❑ ffear ❑ anger ❑ dislike
❑ despair ❑ stress ❑ others

Present social interaction:

❑ high ❑ hallf ❑ low ❑ null

Ambience:

❑ tense ❑ relax ❑ oppressive ❑ with tears

❑ others

Working speed:

❑ slow ❑ half ❑ fast

Unplanned emerging situation:

❑yes ❑no

Intervention objectives:

❑ relax ❑ activation ❑ motivation ❑ others

Musical area:

Repertoire:

❑ lullabies ❑ mixolydian mode ❑ angelical mode
❑ ionic mode ❑ others

Rhythm:

❑ slow ❑ moderate
Accent:

❑ binary ❑ ternary

Dinamic:

❑ pianissimo ❑ piano ❑ mf

Breaks:

❑ yes ❑ no

Psychological response of the people present

❑ smile ❑ cry ❑ look ❑ socialization ❑ others

❑ other observations:

DISCUSSION

In the first place, the present proposal for multimodal intervention is framed within the variables of time and context that are in permanent change within the NICU; therefore, given the circumstances of the hospital context, the flexibility of the music therapist to carry them out will be of vital importance.

Second, it is likely that during the creation of the kinship song, the parents do not want to sing or do not feel able to do so. Remember that what is intended is direct vagal stimulation, which can also be given through humming. The proposal during the individual session will always be an invitation and not an obligation.

Another limitation encountered is the same option of participation in a group music therapy session in the NICU. Faced with the particular situation of parents who have a premature or fragile baby, many parents prefer to spend as much time as possible with their babies and avoid music therapy sessions for them, as it would take time away from their babies.

Also, the presence of the parents will vary depending on the length of the baby's stay in the hospital, which can be days, weeks, or months. Therefore, the participation of the parents in the sessions will depend on the variables of the baby's permanence, the parents' wishes, as well as the relationship of trust and respect established with them during the creation of the kinship song.

Thirdly, the practice of EMT has the potential to bring harmony. However, it also runs the risk of generating chaos (Rosetti and Canga, op. cit). Although the music therapist will work intuitively, he or she must so systematically and with the appropriate training to avoid chaos.

Finally, the new EMT model presented by Birthing Harp lacks, at the time of writing this proposal, data to support it. Likewise, the author promotes its dissemination and research with the certainty that both a psychological paradigm and the same practices of TMS with other similar instruments support it, and trusting that the need for innovation in Music Therapy brings with it its challenges as well as its opportunities.

CONCLUSIONS

The therapeutic use of music aimed at parents or caregivers of babies hospitalized in the NICU aims to promote psychological well-being in the face of the traumatic event experienced. Moments of body self-awareness, physical relaxation, verbal and non-verbal expression, and the creation of mandalas, as well as the shared experience with peers in similar traumatic situations, are designed to facilitate the appearance of positive emotions, reduce stress and anxiety (Van Der Kolk, 2014), and consequently favor the bond with the baby. Social involvement moderates defensive systems, allowing physiology to be calmed and health, growth, and restoration to be supported (Porges, 2011).

The receptive musical and expressive activities proposed in the group intervention are designed to generate a space of containment, stability, and introspection necessary for the integration of the situation that is being experienced. Such integration promotes the desired psychological well-being, facilitating a better relationship with the baby itself.

The creation of the kinship song, together with the recording of the heartbeat, are two musical activities that, in addition to

promoting a positive emotional state, offer parents the possibility of having a tangible sound memory of their time in the NICU and an intimate and cathartic psychotherapeutic moment with the music therapist that is sometimes not easy to generate within the hospital environment. The use of the modulated and prosodic voice of parents singing to their babies promotes direct vagal stimulation, reducing the state of stress in which they find themselves and causing a sense of security (Porges, 2011) in themselves and the baby himself.

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MUSIC THERAPY IN THE REHABILITATION OF THE MOTOR FUNCTION OF UPPER LIMBS IN PATIENTS WITH MULTIPLE SCLEROSIS USING THE KEYBOARD

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Abstract
Background: Multiple sclerosis is a chronic, inflammatory, and disabling disease of the central nervous system. It affects any functional area, mainly people of productive age. Rehabilitation must be comprehensive and involve the different systems simultaneously. Neurological music therapy offers strategies in which several brain areas can be stimulated at once. Objective: To analyze the effects of keyboard music therapy applied to patients with multiple sclerosis with compromised short pathways. Methods: This work is a single case study, in which 22 music therapy sessions are offered to a right-handed patient with multiple sclerosis with compromised motor function of the right upper limb. Both hands were subjected to the same process. Results: The function of the left hand remained without relevant changes, while the right hand achieved significant and sustained changes in the 9-pin test, which remained constant from session 15 onwards. Similarly, the patient reports having regained the ability to perform a series of activities of daily living with her right hand. Conclusions: It is concluded that the process of musical interventions favored the functional recovery of the right extremity in this patient.

Keywords: multiple sclerosis, neurological music therapy, motor function, keyboard, 9-hole pin test

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BACKGROUND

Multiple sclerosis is a chronic, controllable, but not curable autoimmune disease that affects the central nervous system. Since its identification as a clinical entity, its incidence has been increasing due to multiple genetic and environmental factors, in addition to technological advances and greater knowledge of the disease that allow an earlier and more timely diagnosis. Its clinical manifestations are as many as the functions of the central nervous system, in such a way that the patient may present motor, sensory, visual, balance, bladder, and intestinal symptoms, among others. Its highest incidence is in the population of productive and economically active age, with a predominance in women. Multiple factors have been associated with predisposing agents, but there is no clear cause (Nourbakhsh & Mowry, 2019).

The symptoms are not limited to the neurological sphere, as there are a number of other conditions that compromise the quality of life of patients with multiple sclerosis, such as fatigue, depression, cognitive impairment, social and work performance, chronic pain, sexual dysfunction, among others (Lakin et al., 2021).

Multiple sclerosis is the leading cause of neurological – non-traumatic – disability affecting young adults. Its management represents high costs to the health and social economy, not only because of the patient's own needs but also because of the high investments involved in the use of disease-modifying pharmacological therapies. If we add to this the increase in

the incidence, the chronicity of the disease, and the age group most affected, the effect on the economy and productivity is even greater. At the individual level, patients' perception of quality of life and emotional state are seriously affected as a consequence of – and at the same time directly impacting – the degree of disability of the patient (Kobelt et al., 2017). Its management is multidisciplinary, involving specialties such as neurology, neuropsychiatry, mental health, physiatry, urology, social work, and psychology, among others.

Disease-modifying therapies are needed to control inflammatory activity, as well as to address all symptoms, neurological (such as spasticity, neuropathic pain, balance disorders, etc.), and non-neurological (depressive disorder, urological disorders, socio-familial situations, among others). Therefore, pharmacological and non-pharmacological therapies are required (Dobson & Giovannoni, 2019).

Of the main complications from the functional point of view, it is the physical sequelae that generate the greatest disability. Different mechanisms have been described by which the patient can acquire this dysfunction, either by a relapse without complete recovery or by the independent progression of relapses (Lublin et al., 2022).

There are different scales for an objective assessment of the patient's disability status, including Kurtzke's expanded disability status scale (EDSS), the 25-foot gait, and the 9-pin pin test (9HPT). 2003). They can also be used to evaluate the progression of the disease because even if the patient does not have new symptoms, i.e., a relapse, there may be a progression of the disability, as already noted, and this will be decisive in the therapeutic process, both pharmacological and non-pharmacological.

One of the most relevant non-pharmacological elements in the management of multiple sclerosis is physical therapy or rehabilitation. It is very important to establish the degree of disability in this group of patients, as the approach with disease-modifying therapies depends to a large extent on this. It is necessary to define if the physical limitation is real and irreversible or if it is a condition that has not received an adequate rehabilitation process. Physical and cognitive rehabilitation programs should ideally be individualized, structured, and multidisciplinary, according to the patient's needs, as Amatya, et al. (2019) conclude in their review study.

Evidence suggests that physical therapy can improve patients' motor performance and affect other aspects, such as the perception of quality of life, cognition, and fatigue (Amatya et al., 2019). Given the compromise of various functions of the central nervous system, therapies are required that manage to integrate the different tasks and have a pathophysiological impact on the rehabilitation process. One of the therapeutic modalities that has recently taken off in different neurological conditions is music therapy.

From a historical perspective, there are various definitions of the concept of music therapy. However, all of them have essential points of convergence, such as the use of music and its elements applied by a professional music therapist in various contexts for therapeutic purposes to improve conditions and meet the needs of patients (Pérez-Eizaguirre, 2021, pp. 32 - 39). Its use has spread to different areas, involving the social, educational, and health spheres.

One of the specialties that is beginning to make its way into the neurorehabilitation process is music therapy (Jurado-Noboa, 2018), and since MS is the neurological disease par excellence, it becomes an ideal pathology to influence through this specialty.

With technological advances, the options of functional studies in the central nervous system, and the progression of studies in music therapy, a new branch opened up from the 90s onwards, focused on neurological pathologies. "Neurological music therapy" was born, and with it, a series of therapeutic strategies focused on the different needs of these patients based on neurophysiological elements (Thaut & Hoemberg, 2014). Its therapeutic range ranges from stimulation in early childhood to patients with cognitive disorders, sequelae due to cerebrovascular disease, sequelae due to head trauma, and, in this specific case, patients with multiple sclerosis.

Multiple studies support the neuro-anatomical and functional bases by which the use of music in the rehabilitation process optimizes the patient's response to therapy (Soria-Urios et al., 2011), (Ruiz et al., 2019). In multiple sclerosis, being a pathology that affects various functional areas, music therapy can be used to improve motor, emotional, and cognitive aspects, among others.

Different musical strategies have been studied in patients with multiple sclerosis to optimize gait pattern (See-bacher et al., 2022), (Moumdjian et al., 2020), upper limb function (Lamers, 2016), and at least two studies in which the motor function of the upper body has been worked on through the use of the keyboard (Gatti et al., 2015).

Maintaining the functionality of the upper limbs is extremely important for patients who already have a greater commitment to their ability to walk: their hands represent their independence, their ability to carry out essential elements of daily life, such as personal hygiene, feeding, transfers – either with crutches or from a wheelchair to another place such as the bed -, etc.

Since music therapy is an accessible, low-cost alternative, without risks to the patient's physical integrity, without side effects, and that can also integrate other aspects such as cognitive function, emotional state, and the perception of quality of life (Lopes & Keppers, 2021), its implementation is justified in a

systematic and structured way for the rehabilitation of patients with multiple sclerosis.

The present work seeks to analyze the effects of keyboard music therapy applied to a patient with multiple sclerosis with short pathway involvement.

Materials and Methods

Participants

The music-therapeutic intervention was applied to a single patient (individual intervention) in her home. Given his limitations, this context was preferred to avoid the need for displacement. In addition, at home, she handles herself safely, which is very important to promote her performance and participation during activities.

All of their pharmacological and non-pharmacological therapies remained unchanged during the intervention period.

Stimuli and measures

A total of 22 music therapy sessions were carried out under a general structure, detailed in Table I.

The sessions were delivered in a staggered manner in relation to the objectives. We worked under a behaviorist model in which music was used as a stimulus and as a structure to improve the motor function of the upper limbs. The execution of the instrument served as a tool to work on the proprioceptive and motor factors (based on the dynamics, rhythm, and sonority of the piece), thus promoting rehabilitation under the concept of neuroplasticity.

A music therapist supervised all the sessions – supervisor, receiving the respective feedback for the optimization of the process.

Both subjective and objective parameters were assessed. Regarding the former, the evolution of the motor function of the upper limbs was subjectively evaluated according to the daily performance reported session after session by the patient in aspects of daily life (writing, use of crutches, eating, dressing, personal hygiene, brushing teeth, cooking, combing and applying makeup).

Regarding the objective parameters, we worked with the 9-pin test, quantifying the performance in the test prior to the start of the therapy and every two sessions until the end of the process and adjusting the therapies according to the objective progression in this test.

The interlay difference in the performance of the test prior to the start of therapy, every two sessions, and at the end of these sessions, was also assessed, with a view to achieving a significant - positive - difference in the execution of the 9HPT test in relation to the baseline.

Table I.

Structure of music therapy sessions.

Phases and timing	Activity	Objective
Welcome Song 5 min.	Improvised. Greeting. Musical dialogue about the week's activities, their functional progress, their emotions, among others.	Generate a musical dialogue with the patient. Encourage expressiveness and creativity.
Motivational Song 5 min.	The patient is presented with a song by her favorite performers. During this phase, the patient was free to just listen, sing the song, dance to it, keep the rhythm with an instrument or clapping hands, etc.	Generate an emotional-positive environment prior to the therapeutic intervention. Encourage attentive listening. Incorporate rhythmic elements. Promote freedom of expression.
Heating 5 min.	Prior to the start of the keyboard exercises, physical warm-up exercises are performed at the level of the fingers, wrists, elbows, shoulders and neck.	Prevent injuries in a patient who is not accustomed to playing the keyboard.
Setting with the piece	The patient is presented with the target piece in each session: the fourth movement of Beethoven's Ninth Symphony.	Familiarize the patient with the rhythm, sonority and lyrics of the song.
Musical Performance 30 min.	The patient is asked to perform different exercises to become familiar with the technique, posture, relaxation, the execution with separate hands and hands together (mirrored and superimposed), and then they began to advance with the piece itself. For these purposes, a simple tutorial was used in which the posture of the hand could be kept as anatomical and functional as possible. During the performance of the piece, the patient was asked to sing the notes at the same time as she played them.	Rehabilitate the motor and proprioceptive function of both hands. Stimulate lateralization at the brain level. Promote the process of neuroplasticity through the activation and integration of different functional systems at the brain level.
Stretch 5 min.	At the end of the keyboard activity, stretching exercises were performed with different relaxing songs – based on the patient's preferences.	Prevent post-practice injuries with the instrument.
Objective Assessment 5 min.	Every two sessions (odd sessions), the 9 hole pin test was performed.	To assess in a standardized and quantifiable way the progression of the motor function of both hands in the patient.
Farewell 5 min.	Each session ended with a farewell song that, like the opening song, was improvised, highlighting the patient's attitude and achievements.	Motivate the patient to continue with her work and performance in the sessions. Define the end of the session.

Procedure

The sessions were worked as follows:

Session 1: Application of scales – receptive period for familiarization with the piece to be used, given the clinical context and the patient's baseline musical skills.

Sessions 2 to 7: continued with familiarization with the keyboard, notes, finger position on the keyboard, muscle relaxation and other technical aspects. Both hands were worked on—only with the melody—and both hands received the same motor training, reinforced with melodic and rhythmic elements. Given the patient's affinity for singing, elements of melodic solfeggio were used to bolster the process. In session 6, he was asked to initiate a songwriting process in order to promote writing, motivation, creativity, and expressiveness.

Session 8 to 13: Once the patient was familiar with the technical elements, rhythmic elements were added to the metronome, through which parameters were adjusted according to the patient's musical advances and motor ability. The work was kept in separate hands. Rhythmic variants were added to consolidate the musical aspects and favor neuroplasticity, as well as offering conditions that made the dynamics more challenging and less monotonous.

Sessions 14 to 21 We began to work together to integrate motor function and laterality and promote neuroplasticity. Elements such as dynamics and loudness were associated with promoting greater motor and proprioceptive awareness to achieve rehabilitation with intention (not only did we seek to recover movement, but also to attain functional movements through intentionality, direction, strength and coordination of movement).

Session 22: Closing session of the program. Farewell.

For the proper development of the sessions, the following materials were used:

- Portable keyboard - digital - Casio brand - model CTK-4400.
- Base in¨X¨ for keyboard support.
- Wooden drum.
- Xylophone.
- Standard ukulele.
- Harmonica.
- Tripod.
- Digital camera to record the sessions.
- Stopwatch to measure the times when performing the 9-pin test.
- Equipment for the 9-pin test: wooden base, metal pins.
- Electronic tablet where the structure of each of the sessions is recorded, as well as the links to access the respective songs used in the different phases of the therapy.
- Wireless internet connection.
- Connection to electricity for the electric keyboard.
- Metronome (built-in electric keyboard).
- Sign-in sheet.

String and percussion instruments were used to encourage rhythmic activities with motivational songs. They were also used for the improvisation process in the welcome and farewell songs.

Data analysis

The data were taken from the record sheet and prepared to make the respective annotations for each session. Both qualitative and quantitative data were typed and processed for tabulation and analysis in Microsoft Excel 365, version 2.73, of Microsoft Corporation.

RESULTS

We worked with a 47-year-old right-handed patient with multiple sclerosis with an EDSS of 6.5 (moderate disability) and recurrent metastatic thyroid cancer.

A total of 22 music therapy sessions were carried out under a behaviorist model. In general, the patient's disposition for the sessions was always positive, with a fair to good physical condition within her context. During the period in which the music intervention therapies were offered, the patient had a stable underlying disease, with no relapses or need for adjustment in her treatments.

Due to the time of year when the therapies were carried out, work was carried out under very high temperatures, reaching up to 34° Celsius in some sessions.

The subjective parameters assessed are summarized in Table II. The following activities were covered: brushing teeth, brushing hair, putting on makeup, dressing, personal hygiene, writing, cooking skills, eating, use of crutches and personal hygiene. At the beginning of the process, the patient could not perform any of the evaluated activities with her right hand, but she could perform them with her left. From the third session on, she reports trying to brush her teeth, get dressed, help herself with personal hygiene, eat and use crutches with her right hand, but she still couldn't try to comb her hair, put on makeup, write or do kitchen chores. In session number 7, the patient reported that she was able to write with her right hand. By session eight, he indicated that he had managed to eat with his right hand and make proper use of the crutches while the other functions were still in process. In session number 12, the patient says that she is already able to use her right hand to dress herself and for her hygiene, in addition to maintaining the other functions that she has already achieved. Finally, in session number 13, he

reports that he can perform all the tasks evaluated and maintains the faculties during the subsequent sessions until the end of the intervention program.

Table 2.

Achievements achieved after the sessions

Parameter	Basal	Session 7	Session 8	Session 12	Session 13
To write	NO	YES	YES	YES	YES
Use of crutches	NO	NO	YES	YES	YES
Eat	NO	NO	YES	YES	YES
Dress	NO	NO	NO	YES	YES
Grooming	NO	NO	NO	YES	YES
Brushing your teeth	NO	NO	NO	NO	YES
Cook	NO	NO	NO	NO	YES
Comb	NO	NO	NO	NO	YES
Makeup	NO	NO	NO	NO	YES

Note: Summary of the achievements in functional capacity for activities of daily living with the right hand from baseline and in the different sessions.

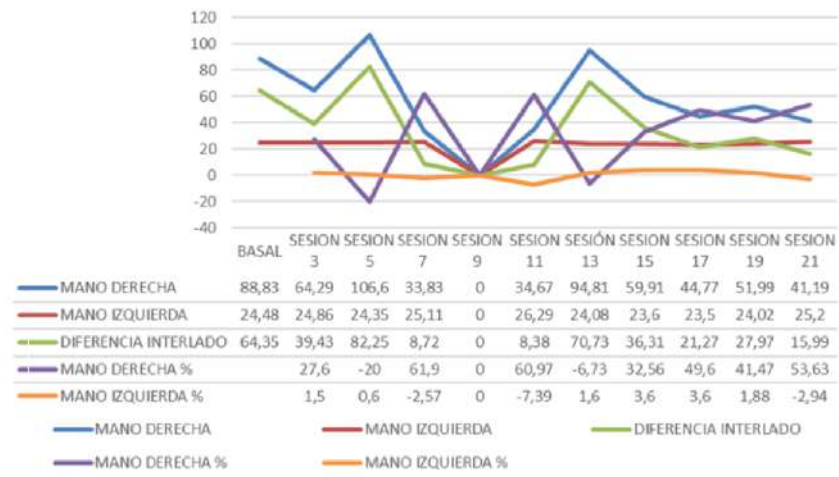
Regarding the objective parameters, assessed with the 9-pin test, a basal time of 88.83 seconds was recorded with the right hand and 24.48 seconds with the left. Figure 6 summarizes the clinical evolution documented with this standardized test session after session. There are three key points in the graphic representation regarding the evolution of the right hand: session 5, in which the percentage difference did not exceed 20%; session 9, in which the test could not be performed, as it was necessary to end the session earlier than expected, since the patient mistakenly took a medication that she was supposed to take at night, and began to have side effects that prevented her from continuing; and session 13, in which the patient was convalescing from the flu and even that day in the morning she had been suffering from a fever.

DISCUSSION

To analyze the data presented, it is essential to understand the context of the results. Several relevant elements are highlighted: first of all, it is important to highlight the patient's health condition prior to each session: as noted, the patient was stable. That is to say; he did not have clinical relapses of his disease that affected his performance during the program: this element was fundamental and decisive for the continuity and development of the musical interventions. There was only one moment – in session 13 – postponed for eight days, as the patient suffered an

Figure 1.

Results of the 9-pin test.



Note: absolute and percentage numbers according to evolution with respect to baseline and interlay difference

upper respiratory infection and was very symptomatic. Still, on the day of the session, he had a fever in the morning, which explains the decrease in the 9-pin test. It is important to remember Uthoff's phenomenon, which implies a deterioration of functions in the patient with multiple sclerosis due to an increase in body temperature, so this was to be expected.

On the other hand, the patient's mood was also relevant in the process: she was always motivated, proactive and creative: she contributed her musical proposals in all the sessions, especially for the welcome song and the motivational song.

Finally, in relation to the general aspects in the context of the interventions, it is worth noting the climatic conditions: as already mentioned, the ambient temperature can decrease the performance of people with multiple sclerosis. The music therapy program was offered to this patient just in the hottest months.

When analyzing the performance in relation to the planning of the different blocks of sessions, it is observed how the patient was achieving the objectives in accordance with what was proposed: the achievement of the technical goals, then the gradual learning of the musical notes with separate hands, then the execution with joined hands, all this accompanied by a process of melodic solfeggio. Initially, a method was worked on that favored proprioception and motor awareness of the right hand by working on the function of each finger individually to achieve the functional recognition of each of them, initially managing to consciously dissociate the movement of each finger until reaching an

integration at a central level that favored the automatic execution of the movement.

This initial process favored joint work, which later led to the definition of laterality. The work was done with the melody: it was not possible to incorporate the harmony with the left hand due to difficulties in coordination, attributable to various factors in the neurological context and musical background of the patient. However, this made it possible to offer the same musical stimulus for both hands, favoring the interpretation of the final functional results.

As for other musical elements, such as rhythm and dynamics, resources were used beyond the use of the keyboard, always within the framework of the proposed activities. Thus, for example, percussion instruments were used with the motivational songs to carry the rhythm of the pieces, which the patient was achieving unconsciously in the course of the sessions, observing the phenomenon of¨entrainment¨: both the patient and the therapist played the xylophone or the wooden drum simultaneously carrying the rhythm of the songs offered; However, in the first session, the patient's performance did not have any agreement with the rhythms offered, and as the interventions progressed, the time came when – without her planning it – she managed to incorporate the rhythmic element and manifest it in the percussion instrument.

Once this was observed, warm-up exercises were incorporated at the keyboard level using the metronome, achieving an early incorporation of the rhythmic factor in the musical performance. The concept of dynamics was also applied in the warm-up exercises, both physical and keyboard, but not with the target piece, as it was difficult for him to process all the components when playing the song. The process of how the patient expressed her need to control the intention of movement was interesting: the incorporation of exercises with dynamics allowed her to understand the mechanism to achieve this goal.

Going into more tangible results, such as performance in activities of daily living, it is important to highlight that the patient was unable to perform absolutely any function with her right hand. She had different verb forms to describe her disability: 'my hand is dead,' 'for me, this side doesn't exist,' 'I had to learn to do everything with my left because this hand doesn't help me'...

During the therapeutic process, anatomical-physiological neurological concepts were explained to him so that he could understand the different mechanisms through which therapies would favor the reactivation of motor functions. Understanding this, the patient tried to reincorporate her right hand into her daily life activities, with important limitations at the beginning. However, maintaining the motivation not to fall into frustration, understanding that the achievements would be seen over time, as this was a process. The first function recovered was writing: within the therapeutic process, the technique of "songwriting" was incorporated to promote their creativity, reinforce their motivation, and achieve greater expressiveness. The proposed theme for the song was his feelings in relation to the music therapy process he was experiencing. He was made a requirement that the song should be written by hand, with his right hand, regardless of handwriting and spelling. The patient achieves this challenge within a week, and her handwriting does not denote fine motor failures.

Since the patient also has functional limitation in the right lower limb, it was of utmost importance that she be facilitated in the use and mastery of Canadian crutches, which she achieved at week 8. In the same way, in this session, he indicated that he was already able to eat with his right hand without dropping the food or without staining his clothes, and more importantly, he recovered the ability to bring the food to his mouth without failing in the directionality and intentionality of the movement conditioned by his cerebellar problem.

This important function could be mediated by the process of awareness that was carried out in the individual work of the fingers, in addition to the visuospatial coordination favored by direct work with the keyboard.

Finally, the patient was able to resume tasks that involved not only the use of the hand but also more proximal motor functions, such as elbow flexion and the different arcs of movement of the shoulder. The patient also had limitations in her proximal mobility as a result of chronic tendinitis and bursitis in the right shoulder, which limited active movements involving this joint.

During the process, in the different warm-up activities, this joint was also worked, and once on the keyboard, the importance of relaxing the entire limb was reinforced. Indirectly, this motor breakthrough was achieved, and these functional limitations were overcome, conditioned more by pain than by real weakness. As he began to use his limb more and increased, this symptom improved, significantly facilitating his daily performance, reflected in his ability to comb his hair and put on makeup.
In relation to the results of the 9-pin test, the documented improvement is highly significant. Here are several interesting facts that should be highlighted:

- The execution of the test with the right hand prior to the start of the therapies lasts more than three times the time that the left-hand lasts, a reflection of the functional condition of this limb. This difference between the two decreases by more than 50%

during the therapeutic process, with the initial difference being 64.35 seconds and the average difference taking into account the totality of sessions in which the test was controlled at 28.6 seconds (55.54% difference).

- The percentage of variability of the left-handed test did not show significant changes, with the understanding that, for the differences to be representative, a difference +/- 20% of the baseline value of the test would have been required.
- In the representation of the right hand, three registers that could be considered "outliers" can be observed:
    - Session 5: The percentage difference was 20%. On this particular day, the ambient temperature was 32°C, and the humidity percentage was close to 90%.
    - Session 13: the patient was convalescing from an infectious process, and on the morning of the day of the session, she had a last feverish peak. Both moments (session 5 and 13) reflect Uthoff's phenomenon.
    - Session 9: The patient took a medication that she should have taken at night, and it caused extreme drowsiness as a side effect, so it was necessary to finish the intervention earlier than stipulated, and the test was not performed.
    - From session 15 onwards, the percentage difference in the execution of the test with the right hand in relation to the baseline remains persistently above 20%, which denotes a significant improvement, and this improvement was sustained during the following therapy sessions.

Although the observed improvement is sustained, there are fluctuations in performance for both hands, reflecting the variability induced by factors such as weather conditions and the degree of muscle fatigue.

As a result, it could vary depending on the test during the day or evening, for example, added to the level of activity performed during the day and the patient's state of mind, among others. Due to the study design, these variables were not directly controlled, but their effect has already been widely reported in the medical literature.

The main limitation of the study is the design, as it is a unique case: under this modality, the conclusions will be specific to the case. They cannot be extrapolated to the population from which the patient comes. It should be noted that musical intervention takes place in an academic context as part of a curriculum; Therefore, the experience of those who offer the therapeutic process is totally limited. Supervision mitigated this factor, which was fundamental to the development of the program.

It should be noted, however, that this intervention addresses an area that has been little explored in terms of clinical and scientific work.

In a musical intervention, the effects of music therapy applied to a patient with multiple sclerosis with compromised motor function in the upper limbs using the keyboard were analyzed, evidencing a positive and sustained response in the standardized 9-pin test and the subjective report of functional improvement in daily activities. Both hands were exposed to the same stimulus, keeping the function of the left-hand stable, with a marked improvement in their performance with the right hand. There was a significant reduction in the functional difference between the sides, narrowing the gap in test performance between the right hand and the left hand.

This case opens up multiple questions and serves as a basis for future research in relation to the role of neurological music therapy in patients with multiple sclerosis. The findings are considered highly significant and justify the need to continue exploring musical interventions in this group of patients.

There is a question that stands out: is it necessary to rethink the paradigm of rehabilitation in patients with multiple sclerosis?

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IN MUSIC THERAPY, PIANO OPENS A WORLD OF ODDS

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MUSIC THERAPY IN THE PROCESS OF RECOVERY AND LIBERATION FROM GENDER-BASED VIOLENCE: A CASE STUDY

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Abstract
Music therapy, increasingly widespread in integrative therapeutic interventions, offers a range of possibilities for supporting victims and survivors of gender violence. The present project aims to outline a case study based on an innovative context. It is taking as reference a transformative narrative and moving away from stereotyping, moving outside the reductionist paradigm for offered by specifically addressing therapeutic intervention with the Muslim population, from an intersectional perspective, focusing on the case of a woman who, due to religious interpretation, rejects the use of music. That is why, inspired by the Andalusian music therapy model and its similarities with Helen Bonny's GIM model, the intention is to verify the effect that the musicality of the Quran generates in reducing the state of anxiety and stress associated with exposure to any of the aspects of abuse. Analyzing the results that have been obtained throughout the entire process, it can be concluded that the contribution of the recitation of the Quran, as a receptive method in a music therapy program, is positive.

Keywords: Music Therapy, gender-based violence, intersectionality, Andalusian, GIM, Islam

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BACKGROUND

Violence against women is a reality that crosses borders and cultures. The mere fact of being a woman obliges her to pay a tribute, which is paid to her body and her freedoms. As noted by Bonomi et al. (2009), it affects up to 44% of adult women (p. 1692). In this way, homes can be the most dangerous places for them, as they become the trenches in which states of emergency take place.

As an integrative therapeutic intervention, music therapy contributes to the accompaniment of women in situations of intimate partner violence. Even so, as Hernández-Ruiz (2005) warns, the scientific production related to music therapy interventions linked to gender violence is scarce despite the prevalence of this reality (p.143).

Gender-based violence does not overlook women's health, who can suffer from a 50% to 70% increase in gynecological conditions, as well as the central nervous system or stress (Campbell, 2002, p. 1157). Lenore Walker (2007) coined Battered Woman Syndrome to refer to psychological signs and symptoms, such as hyperarousal, high levels of anxiety, and emotional dullness that usually manifests as minimization, denial, dissociation, repression, or anxiety (p. 42).

Thanks to studies, such as the pilot program of music therapy in Cuba (Fernández de Juan, 2011), it has been possible to show that the somatization of anxiety is externalized by keeping the body tense (p.192). For Jiménez (2017), the effectiveness of this type of therapy

can be seen in the reduction of the consumption of anti-depression drugs by focusing on music as a tool to induce joy (p. 90). In this way, music therapists can be, as Whipple and Lindsey (1999) point out, a crucial adjunct to developing, implementing, and enhancing existing programs in care centers for women and children in situations of abuse (p. 67) since music acts as a mediating element through an accessible and non-threatening environment for treatment and empowerment.

However, the discursive strategies linked to the use of music therapy in the context of gender-based violence are approached from a homogeneous approach to what it means to be an abused woman. Thus, a hegemonic narrative is reproduced that circumscribes the ontological victim as a monolithic block, distancing itself from the plural reality of the women who fit into this situation. For this reason, the intersectional view offers a counter-hegemonic aspect far from stereotypy, offering tools for intervention with the Muslim population, specifically with those who present resistance to the use of music.

Given this diversity, it is necessary to find treatments that take into account the inclusion of spirituality. For this reason, in recent decades, research has begun to be carried out in the area of Alcoran and medical science. The reading of the Qur'an is done through different maqamat, that is, the use of a specific melody with measured and embellished intonations, merging the meaning of the set of verses recited with the corresponding mood and emotion (Shahriar & Tariq, 2021, p. 117.271).

Several studies explore the impact of the musicality implicit in the recitation of the Qur'an to verify its effectiveness in reducing the state of anxiety, such as the one carried out by Al-Jubouri et al. (2021), which accounts for the benefit of using the Alcoran to minimize the impact of anxious conditions (p. 1612).

According to Hoffmann (2007), the recitation of the Qur'an creates a musical atmosphere, from which the Qur'anic text is embellished through musical modulations, highlighting verbal sounds, with repetitive patterns of rhymes and alliteration, iconicities (puns and onomatopoeias) or inferred sounds (p. 109).

Materials and method

Participant

The intervention is carried out with a forty-year-old woman of Spanish origin and Muslim confession. She is divorced after twenty-two years of marriage to the aggressor, eighteen years her senior. He is of Algerian origin and Muslim tradition. As a result of their relationship, they have a nine-year-old son together. The guardianship and custody falls to her, having established a visitation regime. Parental authority is shared.

She reports that psychological violence is established in the relational dynamics of the couple from the beginning of the cohabitation, escalating in intensity, frequency, and severity before the birth of the child and when she decided to end the relationship two years ago. The cohabitation persisted until ten months ago, when she decided to leave the home with the child. Vicarious violence is also identified, a fact that makes him re-experience situations of abuse. No complaint of ill-treatment has been filed.

It can be seen that the violence suffered does not have a cyclical structure from the moment it begins, given that, in the story of violence, no phase of affective manipulation or honeymoon is detected.

It is observed that there is no emotional bond with the aggressor and that the mourning for the broken family project has begun to be elaborated, with the re-establishment of the meaning of the experience lived as undesirable and violent.

She is diagnosed with an anxiety-depressive condition associated with the experience of gender violence in the couple. For the past two years, she has been receiving daily pharmacological treatment consisting of Zolpidem Scillatropan Cinfa (antidepressant), Pristiq (antidepressant), and Rivotril (anxiolytic). It manifests continuous dullness, confusion, and attention difficulties. Verbalizes presenting sleep disturbances, having difficulty falling asleep and sustaining it for more than two continuous hours.

The collection of the child after each visit with the father is activated on an emotional level, where he expresses that he feels fear, anger, guilt, and helplessness because of the behavior of his aggressor.

The woman expresses feelings of guilt and shame for having sustained the violent relationship over time and for the impact that this decision has had, on an emotional level, on her son.

Resources

- Musical instruments: Oceandrum, ney, orff percussion instrument case, guitar, portable keyboard, ukulele, recorded selection of recitations from the Qur'an, sounds of nature.
- Helpful resources: small water fountain, Story Cubes, paint and paints, colorful handkerchiefs and fabrics, two tennis balls and two stockings, a pack of balloons, bubble wrap, eight chopsticks, a skein of wool, four old newspapers
- Technological equipment: Tablet, speakers, mobile phone with a high-resolution camera (4K), tripod, and internet connection
- Other materials: two cushions and two mats
- Human Resources: A part-time music therapist

Music Therapy Sessions

A total of twenty sessions have been carried out under the structure shown in Table 1, combining the receptive method

and the active method of music therapy. The design of the set of sessions has taken inspiration from the Andalusian music therapy model, which, in turn, has certain similarities with the GIM model. Each session is initially divided into eight phases, with variations to adapt to the woman's personal and emotional circumstances.

With regard to the choice of musical instruments, special care has been taken to respect diversity, taking a disposition of openness on the part of the music therapist without the intention of modifying the codes formed by the patient with respect to the illegality of music or musical instruments. However, at the woman's request and prior to the start of the sessions, she was provided with written information on the findings found in relation to the prohibition of music from the Islamic paradigm.

Likewise, despite the fact that the programming of the sessions was initially designed to be developed with the tambourine and ocean drum, in each session, a variety of instruments were available (ney - reed flute used in Andalusian music, orff percussion instrument case, guitar, portable keyboard, and ukulele) accessible to be used by the patient if she wished. At the same time, the suitcase of instruments was left at home so that she could use them with her son, if she considered it necessary, as a way of approaching and improving mother-child communication. It should be noted that, in both situations, the patient made use of them.

Within the techniques of the receptive method, the following have been used:

- Relaxation: They were introduced in each session to open the way to physical, physiological, and psychological relaxation, deep states of consciousness, connecting with your inner self, and looking at the session and the process you are experiencing. In this phase of internalization, we have sought to create spaces to disconnect from the stressors of their daily lives, acquiring new tools for their application outside the program.
- Imaginary Listening: It is the technique used within the receptive musical journey, referring to the use of recorded auditions of the recitation of the Qur'an to stimulate the patient's images. The selection of the pieces has been based on those indicated for their importance in the sound-musical historiography of women, as well as those whose message can serve as a catalyst, such as the azora Al-'Ihlas [Adoration], highlighted for spiritual development or the azora An-nur [The Light], whose message focuses on the repudiation of violent treatment: sexual offenses and defamation of women. The sound of moving water has accompanied it. These

Table 1.

Initial Session Structure

Session Phases	t	Activities	Objectives
Preparation Heating (Externalization)	5 min	Water Purification Ritual Recitation of Al-Fatiha Azorah [The Opening]	- Adapting to the physical space - Preparation for the start of the therapeutic process
Motivation for the session (Internalization)	5 min	"I Sound Like This" Activity Use the ocean drum as a tool to express your mood, what your dream has been like, etc.	- Promote self-regulation - Become aware of your own moods - Develop verbal and non-verbal communication tools
Conscious Body Activation (Externalization)	10 min	Free Sound and Body Expression	- Strengthen body self awareness - Unlocking tensions using the body as a means of communication - Promoting freedom of expression
Prelude	20 min	Initial interview to learn about your current concerns	- Mark the situation you want to address
Relaxation (Internalization)	10 min	The music therapist will guide through the induction to relax and create a bridge between the outside and the inside of the woman	- Reduce anxiety and stress - Focus on the auditory and visual senses.
Receptive Musical Journey	20 min	Selection of azoras from the Qur'an that help to provoke the awakening of images and emotions in women. If you wish, you will be able to detail the images, feelings, thoughts and emotions that the musicality of the Qur'an evokes in you.	- Reduce anxiety and stress - Help release negative structures settled in the mind
Epilogue (Internalization/ Externalization)	20 min	Creative exploration with mandala drawings or musical improvisation. Verbal Communication, Exploring the Musical Journey	- Reflect your experience of the session - Promoting freedom of expression - Encourage expressiveness and creativity
Farewell (Externalization)	5 min	Water purification Dua' [Supplication]	- To thank the achievements achieved in the session

Source: Authors' own elaboration based on Mateos (2004, p. 18)

images can be mental or take the form of smells, tastes, bodily sensations, etc.

- Live Auditions: They have been developed during the epilogue phase, in the first part aimed at the representation and symbolization of their experience in the receptive musical journey. To do this, the music therapist used the ocean drum or the ney, promoting a state of tranquility in the patient and stimulating images while helping the woman express emotions graphically.

- Recorded auditions and lyric analysis: As this is a technique used in the field of music therapy with abused women, a consensus was reached with the patient on the choice of two songs that, due to their lyrics, could reflect some type of violence against women. The woman was invited to express herself sonically, or through the ocean drum, of the emotions evoked by the lyrics.

- Likewise, recordings of relevant music in the musical historiography of the patient, "Cucurrucú Paloma" interpreted by Caetano Veloso, were used. These recordings were used during creative expression techniques, helping you connect with positive memories and moments of tranquility and happiness.

On the other hand, the techniques used within the active music therapy method have been the following:

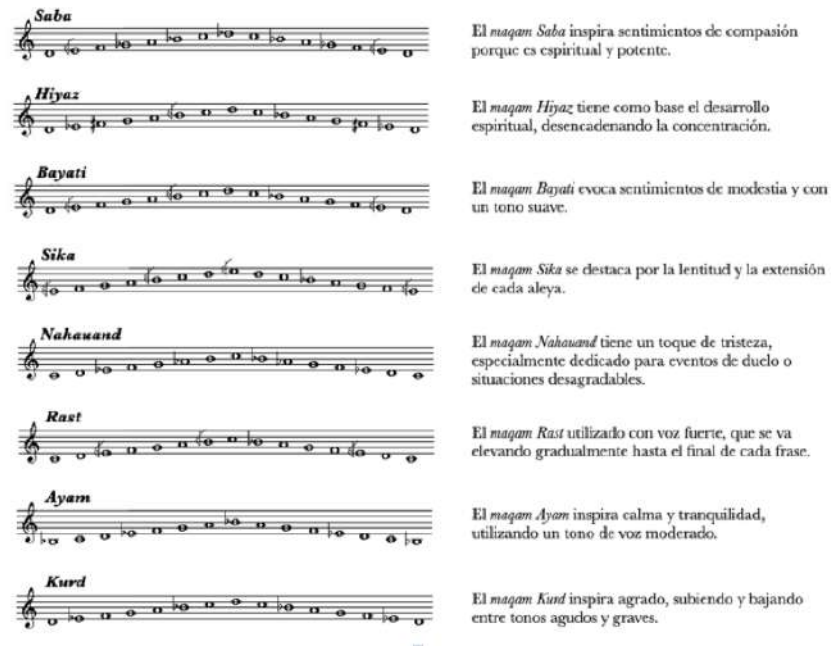
- Vocal and instrumental improvisation: The use of this technique during the program sought to awaken creativity in the patient, offering a channel of communication and a space of freedom, breaking her blockages and reinforcing her self-confidence and self-esteem.

- The Singing: Focused on the recitation of the Qur'an, thanks to its vocal melodic proposals, it has sought to create a path for self-confidence and self-knowledge and to restore the balance and integrity of one's inner being. The eight main maqamat used for Qur'an recitations are Sheba, Hijaz, Bayati, Sika, Nahauand, Rast, Ayam, and Kurd (Shahriar and Tariq, 2021, p. 117.272), as shown in Figure 1. One of the keys to the recitation of the Qur'an is based on the use of a slow tempo, with rhythmic variations adapted to the text.

- Rhythm and percussion: They have worked through the tambourine as a way to channel their conflicts and as a tool for emotional expression in a non-verbal way. Free and undirected spaces have been created, facilitating the expression and channeling of emotions. Through Rhythm and percussion, it has been intended that the patient connects with her body and mind, varying in intensity, dynamics, or tempo, as a catalyst for the reinforcement of her emotional security, making it possible to

Figure 1.

Main maqamat used in the recitation of the Qur'an



Source: Authors' own creation

strengthen the relationship with her vital Rhythm and with her own body.

- Sound-body expression: Body expression, through movement, has been introduced so that the patient can express herself freely and feel alive and empowered. This technique has been introduced for women to connect with their bodies and become aware of their inner world and the environment. It has also been included for the relaxing benefits it can bring to the body, especially when accompanied by the ney.

  Body percussion has been incorporated into this classification, in which the body becomes a dynamic instrument to create rhythms and sounds. Through this technique, they have sought to express feelings, increase self-confidence, improve self-perception, and improve their communicative tools.

- Creative Expression of Hearing: After the imaginary listening, the patient was invited to express, in a graphic and written way, free body movement, the images, feelings, thoughts, or emotions that the journey within her had evoked.

- Musical composition: It is another of the most used techniques in music therapy for women who are or have been exposed to gender violence, as it is a deeply personal work to express, narrate, or free themselves from their violent experience, to process grief, taking a turn towards a transformation of themselves. The music the-

rapist has harmonically accompanied the lyrics composed and sung by the woman with the piano (keyboard).

Data collection and analysis

At the end of each session, a registration sheet was completed where the indicators to be evaluated were collected according to measurable achievements.

In order to evaluate the intervention carried out in music therapy, it is necessary to divide it into three blocks:

1. Initial Assessment

1.1. Quantitative. Through pre-test psychometric instruments, where the person chooses, among alternative possible answers, the one that they consider best suits their situation:

a. Coopersmith's Self-Esteem Inventory (1981).

b. Beck BDI-II depression test (Beck et al., 1996).

1.2. Qualitative, through a semi-structured ad hoc interview, as mentioned above, thus knowing the patient's starting point before the music therapy intervention.

2. Continuous evaluation

2.1. Preparation of registration sheets. The sheets were completed at the end of the session, and the necessary adjustments could be made for the next session.

2.2. Review and analysis of the multimedia recordings after each session, pointing out those successful and unsuccessful strategies and making the pertinent adjustments.

3. Final Evaluation

3.1. Quantitative. Through post-test psychometric instruments, where the person chooses, among alternative possible answers, the one that they consider best suits their situation

a. Coopersmith's Self-Esteem Inventory (1981).

b. Beck BDI-II depression test (Beck et al., 1996).

For the analysis of the data obtained, both in the record sheets and the psychometric instruments, they were digitized and processed using Apple's Numbers program, version 13.1.

Results

It can be observed that the results obtained in the Coopersmith self-esteem inventory confirm the improvement produced after the musical intervention (Table 2). Thus, it can be seen that, although the level of self-esteem oscillates in the same range of average self-esteem (12 points in the pre-test and 15 in the post-test), the patient's self-perception and the experience herself assessed in relation to her physical and psychological characteristics has brought about a positive change. Similarly, there are modifications in attitudes and experiences in the family environment, showing a degree of significance in the feeling of feeling loved and valued by their family.

Table 2.

Comparison of results of the Coopersmith Self-Esteem Inventory

	Pre-test	Post-test
Problems usually affect me little	False	True
I have a hard time speaking in public	True	False
If I could, I would change a lot of things about myself	True	False
I can easily make a decision	False	False
I'm a nice person	False	True
At home I get angry easily	False	False
It's hard for me to get used to something new	True	False
I'm a popular person with people my age	False	False
My family usually takes my feelings into account	False	True
I give up easily	True	False
My family expects too much of me	True	False
It's hard for me to accept myself as I am	True	False
My life is very complicated	True	False
My colleagues almost always accept my ideas	False	False
I have a bad opinion of myself	True	True
Many times I would like to leave my house	False	False
I often feel disgust	True	False
I'm less pretty than most people	True	False
If I have something to say, I usually say it	False	True
My family understands me	False	True
Others are better accepted than I am	True	True
I feel like my family is pressuring me	True	False
I often get discouraged with what I do	False	False
A lot of times I'd like to be someone else	True	False
I can be trusted little	False	False
Total Scores	12	15

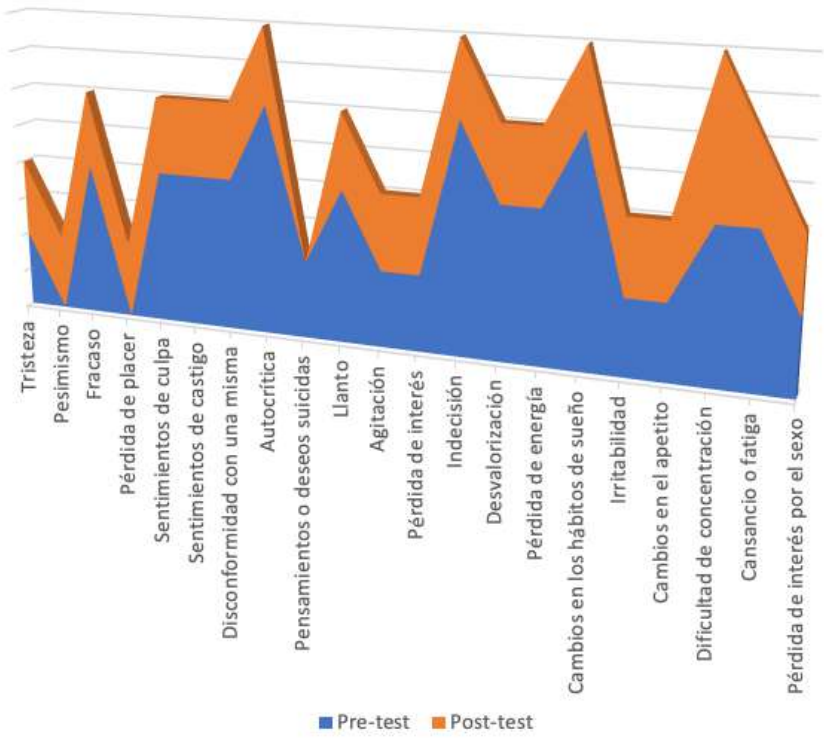
Source: Authors' own elaboration based on Coopersmith (1981)

Improvements in the severity of depression were observed, going from a total score of 34 (severe depression) to 21 at the end of the music therapy program, being within the scale of moderate-severe depression (Figure 2). The changes are reflected in both cognitive-affective factors, with a score of 20 (0.51) at the beginning of the program, compared to the score obtained at the end of the musical intervention, with a result of 12 (0.31). At the same time, the somatic factor has also been reflected in the improvement, going from 14 (0.58) to 9 (0.38).

These results go hand in hand with those obtained in the sessions, measured through the log sheets (Table 4). Throughout

Figure 2.

Comparison of results of the Beck Depression Test BDI-II



Source: Authors' own elaboration based on Beck et al. (1996)

the twenty sessions, the level of anxiety has been reduced without it remaining linear. The peaks that are reflected in the absence of smiling, lowering of the gaze, sustained tension during relaxation activities, or the worsening of falling asleep coincide with the return of the child from the overnight stay with the aggressor, in the visitation regime, and the re-experience of episodes of violence.

Likewise, a notable improvement in the patient's self-esteem is observed, which has resulted in the changes found in body language, such as being able to hold the gaze with the music therapist for at least five seconds or not apologizing, especially in moments of liability or emotional openness.

DISCUSSION

Although the scientific production on the positive effects of music therapy for the treatment of anxiety and the improvement of self-esteem is extensive, there is hardly any research that focuses on the field of gender violence. It should be noted that the publications that intersect music therapy and gender violence incorporate their objectives to reduce anxiety and raise self-esteem, among other objectives, demonstrating in all cases the effectiveness of this type of treatment.

It has not been possible to find studies that introduce intersectionality in the application of music therapy based on a view that breaks with a hegemonic narrative towards victims of gen

Table 4.

Indicators recorded during each session according to short-term objectives

Short-term goals	Indicators	1,2,3,4
1. End the session with a smile	Show a smile at the end of the session	
2. Reduce repetitive foot and hand movements	On the musical journey he is able to maintain relaxed body posture for at least 20 minutes	
	During the epilogue he is able to maintain a relaxed body posture for at least 5 minutes	
3. Improve sleep	Verbalize that you have improved your sleep at least two nights following the music therapy session	
4. Be able to hold your gaze with the music therapist for at least 5 seconds	Maintain eye contact with the music therapist for 5 seconds	
5. Expressing Your Emotions Without Apologizing	He is able to go on the musical journey unapologetically	
	He is able to perform the epilogue unapologetically	
6. Increase Communication Skills	Show emotions of joy	
	Shows emotions of sadness	
	Shows angry emotions	
	Shows emotions of fear	
1. Never 2. Sometimes 3. Often 4. Always.		

Source: Authors' own elaboration based on Beck et al. (1996)

der violence. Therefore, the present case study sets a precedent by investigating the specificity of casuistry that moves away from generalizations.

On the other hand, research that includes the treatment of anxiety through the recitation of the Qur'an is not always framed as a music therapy program but rather as treatments that incorporate spiritual sensitivities. Even so, these studies confirm the positive effects that the use of this receptive method has on their patients. To date, it has not been possible to find scientific works that incorporate the recitation of the Alcoran within music therapy programs aimed at women exposed to gender violence.

CONCLUSIONS

This study aimed to verify the effect of the use of the musicality of the recitation of the Qur'an in a Muslim woman in the process of recovering from an experience of gender violence within a music therapy program, seeking to reduce the state of anxiety and increase self-esteem after exposure to any of the aspects of abuse. Analyzing the results obtained throughout the process, it can be concluded that its application is positive.

The implementation of a pioneering program such as this one has required a tenacious bibliographic search, highlighting the historical debt that contemporary music therapy owes to Arab and Muslim societies and, specifically, to Al-Andalus. In the review of texts, it has been possible to verify how it is mentioned anecdotally or openly banished from the relevance on which the discipline is currently based.

It should be stressed that a case study lacks the generalizable capabilities that other types of research offer. However, through this program, an attempt has been made to open the way to a counter-hegemonic view of intervention with women who are exposed to gender-based violence and who would not have a place in the standards usually offered in shelters.

In this theoretical process, based on extensive experience working in the field of gender violence and intervention with Muslim women, it has been possible to design an intervention proposal inspired by the Andalusian model and the GIM model, developing a methodology of music therapy intervention adapted to the process of liberation and recovery of Muslim women in situations of sexist intimate partner violence.

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MUSIC THERAPY FOR SINGERS: EMOTIONAL UPDATE PROCCESES

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Abstract
This paper presents a study focused on music therapy with musicians, specifically, on the use of the singing voice as a therapeutic tool. Although there has been previous research on music therapy with musicians, there is little literature addressing work with professional singers. The objective of this study is to contribute to the literature of the discipline, providing information on music therapy conducted with music professionals from a vocal perspective. The scientific literature related to the application of music therapy with singing voice in the self-realization process of a professional singer has been reviewed, analyzing the theoretical foundations of music therapy, the methods and techniques used. The methods used and the activities carried out in the music therapy sessions are described, and the results obtained are presented, which show positive effects on the personal development of the participant. The conclusions highlight the contribution of this work to an under-researched area pointing out the need for more precise evaluation methods and future research in this little-explored field is suggested.

Keywords: Vocal music therapy, self-realization, professional singer, humanistic therapy, personal development.

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BACKGROUND

"This is just a seed that will one day blossom.
That he will look for a thousand colors to be able to combine
And with its new nuances, enrich, preserve,
And complete the beauty of this musical garden." C.M.

Music therapy work with musicians is something that has been previously investigated by several professionals from various approaches (Lee, 1996, 2003; Bruscia, 2014; Ponce de León y Olmo, 2017; Gontijo et al. (2020); Muñoz Cano (2022); López Calvache, 2013; among others). In any case, the literature found regarding other research topics is relatively scarce, and even more so, the work done with a professional singer. This work is a contribution to the music-therapeutic literature on music therapy performed by music professionals from the vocal point of view. It joins other studies carried out with professional musicians and aims to complement this information from a more specific point of view where the vocal will be explored in depth since both the music therapist in training and the participant are professional singers. It is for this reason that this study is relevant, as it provides data on the work with music therapy focused on the singing voice, in addition to having the purpose of deepening the self-realization and personal development of a professional singer.

This study and the work with the participant are based on three basic pillars: the process of emotional actualization and self-realization through music therapy, the role of music and particularly the voice in this process, and music therapy work with professional musicians.

Towards a Definition of Self-Actualization

Different psychological currents have widely studied the concept of self-actualization, and it has become a fundamental theme in the understanding of human development and psychological well-being. Self-actualization refers to the process of personal development in which one seeks to reach one's full potential and satisfaction in different areas of life. For singers, self-actualization can also involve developing their vocal ability and emotional connection to their music, fulfilling their career, and contributing to society through their art. Self-actualization is a fundamental concept in humanistic psychology and has been studied and developed by various authors.

For Maslow (1968), self-actualization is the innate tendency of human beings to realize their potential to achieve fulfillment and satisfaction in their lives. For Rogers (1968), self-actualization is an ongoing process of personal growth that occurs through self-determination and unconditional acceptance of oneself.

The importance of the concept of self-realization lies in its quality as a basic need of every human being, and its search can be an engine for the realization of personal goals.

In Rogers' (1981) client-centered therapy, self-actualization is one of the main therapeutic goals. The therapist aims to help the patient achieve self-actualization, which involves becoming the person she is capable of being. To achieve this, the therapist must create a therapeutic environment that facilitates the patient's self-discovery and self-development (Fontgalland, 2012). The goal is for the patient to learn to trust their own experience and to trust themselves to reach their full potential.

As the patient delves deeper into their inner world, they learn to identify and express their needs and desires more clearly. This allows you to make decisions and actions that are in line with your true self and personal values, leading to a greater sense of self-actualization. In therapy based on Maslow's theory (1968), self-realization is the main goal of the therapeutic process. The therapist aims to help the patient achieve self-actualization through the exploration and development of basic human needs. The goal is for the patient to learn how to meet their needs healthily and effectively, which will allow them to reach their full potential. (Fontgalland, 2012)

Humanistic Theory of Music Therapy

Humanistic theory in music therapy is based on the idea that each individual has a unique and valuable potential for growth and change. This approach focuses on the patient and their needs, and the therapist is considered to be a facilitator in the therapeutic process rather than an expert directing the treatment.

Music therapy uses both active and receptive methods to achieve different therapeutic goals. Active methods involve the patient in music production, while receptive methods involve listening to or responding to the music being played. Improvisation, re-creation, and musical composition are active methods that can help foster emotional expression and improve communication and social interaction (Castrillón, 2017). Receptive methods, on the other hand, involve listening to and responding to music and can be helpful in reducing anxiety and promoting introspection (Torres, 2008).

As for the voice as a therapeutic tool, it is not only considered a means for artistic expression but also as a way of accessing the emotional and personal dimensions of the individual. The voice is an expressive resource that is intimately linked to the identity and history of each person, which makes it a tool of great value in the approach to various psychological and emotional disorders (Torrado, 2022).

There are multiple techniques, such as improvised singing, which is useful in music therapy to help patients release repressed emotions and increase their emotional self-awareness (Cabrera, n.d.); voice therapy, which is a technique used in music therapy and focuses on vocal training and rehabilitation to help patients improve their vocal and communicative ability. (Morante, 2001), embodied voice work, which uses expressive, non-verbal singing and improvisation and works on the development of human potential through improvisation and a mindfulness and listening exercise (Sokolov, 2021), vocal psychotherapy that uses the voice as a therapeutic tool for self-reflection, emotional expression, and personal transformation, through the exploration of the participant's relationship with their voice, vocal expression, and the facilities or blockages that may be present (Austin, 2016).

The use of the voice in music therapy is a powerful tool that can help patients in the process of self-actualization. Techniques involving the voice can improve communication, self-esteem, and emotional connection (Gamella-González, 2023).

Benefits of Music Therapy for Professional Musicians

Music therapy can offer numerous benefits to professional musicians in terms of mental health and emotional well-being, which in turn can improve their musical performance and job satisfaction. According to a study conducted by Gontijo et al. (2020), music therapy brings benefits to professional musicians in the work of creativity and spontaneity, resulting in the enhancement of their self-esteem and musical performance. It can offer

multiple benefits to professional musicians, including reduced stress and anxiety (Muñoz Cano, 2022), depression and expressive exploration (Lee, 1996), improved concentration, attention, and interpersonal relationships, increased job satisfaction, and self-efficacy (Castilla, 2022). These benefits can improve musicians' emotional and mental well-being and, in turn, improve their musical performance and job satisfaction.

In the case of professional singers, music therapy can be a valuable tool for improving professional practice and emotional and mental well-being. However, as mentioned above, the literature on this subject is very scarce. It gives reason to think that it is a topic on which there is still much research to be done and on which important contributions can be made for the development and future research on this specific topic.

Objectives

The main objective of this study is to provide the music therapy literature with a unique case study that addresses topics that have already been researched but do so by combining elements that have not been addressed following the parameters analyzed in it.

In addition to this main objective, there are other secondary but no less important objectives, which are to systematize and record in a document the knowledge acquired in the practice of music therapy sessions carried out by a music therapist in training who is a professional singer for a participant who is also a professional singer, to know and review the existing literature on music therapy with musicians and the gaps that may exist in it and to generate a future projection for the future of music therapy. I work as a music therapist for the trainee student.

MATERIALS AND METHOD

Participant

Participant AA is a 33-year-old woman who currently has no physical, psychological, or mental pathologies. She has a great interest and curiosity in starting a music therapy process since she is a professional musician in the area of singing and has the desire to deepen her personal development. A couple of years ago, he had complicated medical problems that led to depression, which was treated by a psychiatrist who, at the time, prescribed medication (Fluoxetine) that he has been gradually stopping. At the time he started treatment with music therapy, he took the minimum dose supervised by his doctor in order to stop it definitively.

As soon as the music therapy sessions are proposed to the participant, she is asked what aspects she would like to work on in the music therapy sessions. She states that her main interest is personal exploration through music and finding something different from her previous experiences that can provide her with tools to understand better and fit in with her environment. One of her big concerns is job stability, as she usually works in production in different countries in Europe and cities in Spain, and she would like to find a more stable job that will allow her to settle in a city and stop traveling so much. As stated in the objectives of the case study, the exploration and emotional expression through music was addressed with AA, as both the client and the therapist in training are professional singers. A vocal work that had previous experience was carried out and was deepened by both.

We sought to take advantage of this known and explored terrain to find new approaches from the work with the breath connected to the relaxation, visualization, interpretation, and expression of the sung voice in order to be able to explore the inner and emotional world of AA from a very familiar tool such as the voice. The participant has also studied percussion and played drums. This also allows you to work from a rhythmic point of view and do different physical and physical work than you do with your voice from tools that are also familiar to you. Work was also done with instruments such as the guitar, piano, and traditional Colombian instruments and airs, since AA has a wide background in the traditional music of her country and it is something that stirs emotions and childhood memories in her.

Objectives

The long-term goal of the participant is to be able to enjoy music as an effective and pleasurable space for emotional work, self-knowledge, and personal development. The therapeutic objectives are to express emotions and mood through music, to improve the relationship and well-being of the client with her environment and with herself, and to work on body awareness. Breathing and relaxation through singing.

Materials & Activities

For this study, a total of 15 one-hour sessions were carried out, with a variable frequency given the difficulty of the patient's time availability, trying to have two sessions a week, except for problems already mentioned, and in no case a frequency of less than one session per week. Although each session responded to the needs that arose at each moment, a common practice in humanistic music therapy (Bruscia, 2014), all sessions have a basic structure that is described below: all sessions begin and end with the completion of the Mood Assessment Scale (EVEA). T

his tool allows you to know the effect that the session has had on AA's mood. In the first sessions, there was a small verbal exchange of how the client was doing and how she was feeling that day. This had to be eliminated for reasons of competence and responsibility of the therapist-in-training. Then, we entered a phase of relaxation that worked either with breathing exerci-

ses, with listening to music proposed by the therapist in training or chosen by the participant, or with visualization exercises. This selection varied according to AA's needs. It consisted of a phase of preparation for the session, where she could relax her body and mind, leave the worries and worries of the day-to-day, and be able to be calm and focused on working musically on that exploration that was sought with the music therapy sessions. This was followed by a phase of musical intervention that was approached with different techniques through different activities that are narrated below. At the end of each of the sessions, the trainee therapist completed the registration form to record the musical and therapeutic data worked on during the session and recorded the observations of the session in a diary.

Procedure

For the intervention design of this study, a previous study of the characteristics of the participant, the purposes of this intervention, and her musical skills and tastes has been carried out. This study has focused on the work with the singing voice precisely because of the profession of the participant and that of the therapist, and we wanted to take advantage of the benefits of the singing voice in self-exploration for this study that focuses on the deepening of personal development and the self-realization of AA.

From this first session, we begin to work with the sung voice, focusing mainly on vowels. After a phase of conversation, there is a phase of re-laxation through breathing and listening to music proposed by AA or by the therapist in training. Then we work on emotional exploration where, based on sound, we connect with images and emotions and seek to dive into the inner world of AA to recognize the feelings that arise and the way in which we express them with singing. This is also done with humming, which works from vibration. There is also songwriting with the voice of AA and the bass drum accompanying the singing. It seeks to investigate the things, places, emotions, and people that are important to AA through the lyrics of the song and the solo and duet singing with the therapist in training. In this emotional exploration, the difficulty that AA has in manifesting the emotion of sadness is evident, and therefore, this becomes a target to be treated.

From the fifth session onwards, the emphasis is on musical language rather than verbal language. The next ones had to be done online because the participant had to travel. In addition to this, AA had health problems that affected her vocal folds, and it was not possible to continue with the singing part. Sessions were then held with body percussion and percussion with everyday objects (jars, glasses, pens). This new way of working made AA relax a lot when it came to improvising because, as she said, being a singer, she tended to judge herself and not allow her voice to come out freely out of fear and because of the habit of permanent self-evaluation that she does in her professional work. A lot of work was done on improvisation with percussion and the evocation of important memories in AA's life. A new goal was then established, which was to ensure that AA could sing in a way that forgot self-censorship and that it could enjoy singing and everything that could arise through it, not only therapeutically but also interpretatively.

So, in the following sessions, work began to be done to resume the use of the voice. Little by little, the voice was incorporated. In the last sessions of the therapeutic process, there was a work focused on the interpretation of songs solo and in duo with the therapist in training and AA, who showed great enjoyment in making music with the therapist. It should be mentioned that AA began to use music in her day-to-day life to reach states of calm in moments before making important decisions or having complicated conversations, and this shows that the activities carried out in the sessions were effective and replicated by her in her day-to-day life. In the last session, there was an evaluation of the whole process with AA. The moods and activities carried out were re-called, and AA said that she was able to take elements from the sessions to connect with them differently with her day-to-day, especially with Colombian music, and this has made her want to make closer contact with this music again and use it to reconnect with herself.

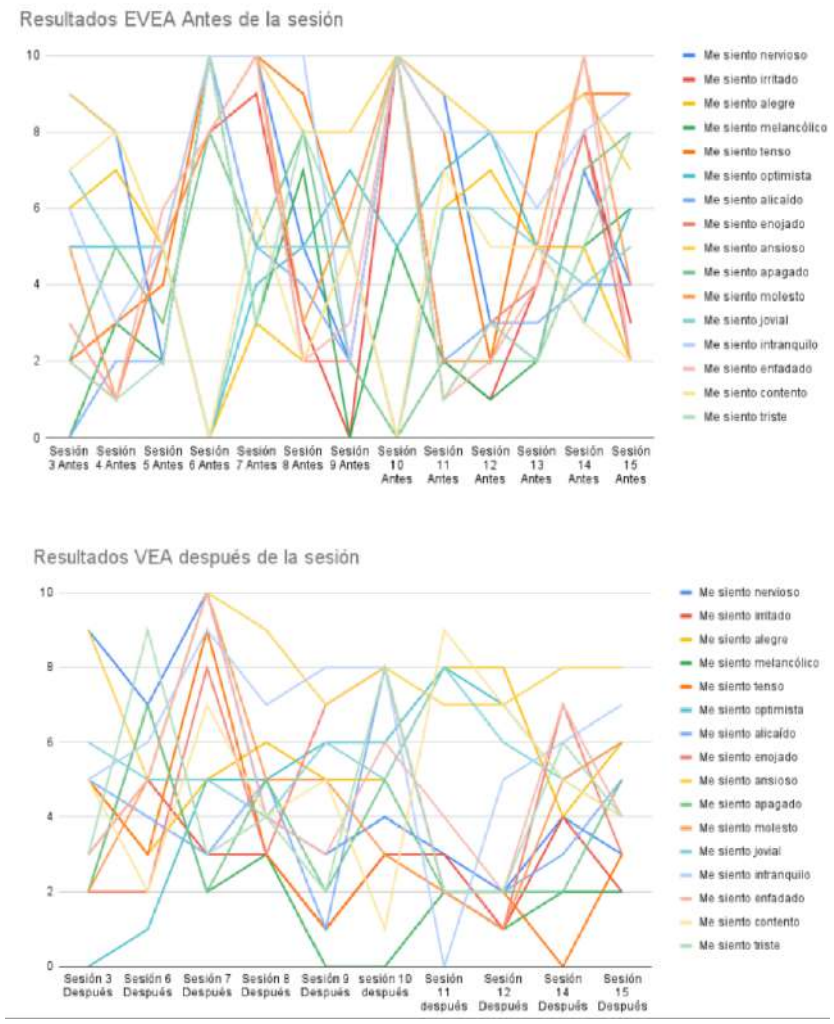
Analysis of results

EVEA Questionnaire (Figure 1): The comparative analysis reveals, firstly, that there is a qualitative difference in the nature of the emotions experienced before and after each music therapy session, especially with regard to emotions such as anxiety or anger. These differences become more prominent as the sessions progress, suggesting that the training acquired during the previous sessions contributes positively to the results obtained in the subsequent music therapy sessions. This observation underscores the importance and effectiveness of the music-based therapeutic approach in influencing participants' emotions. The results indicate that music therapy not only has an immediate impact on the feelings experienced after each session but also generates progressive learning in emotional regulation as the treatment progresses. This positive development suggests that the techniques and strategies employed during the Music therapy has a cumulative and beneficial effect on the emotional well-being of participants.

Log sheets (Figure 2): A line chart is presented that represents in points the data recorded throughout the different sessions. These points allow you to observe trends and patterns over time. In addition, trend lines have also been plotted to help infer how the data would behave should the sessions continue in the future. In terms of the degree of participation, both the dots and the trend line show a high degree of consistent involvement over time. The same happens with the emotional and

Figure 1.

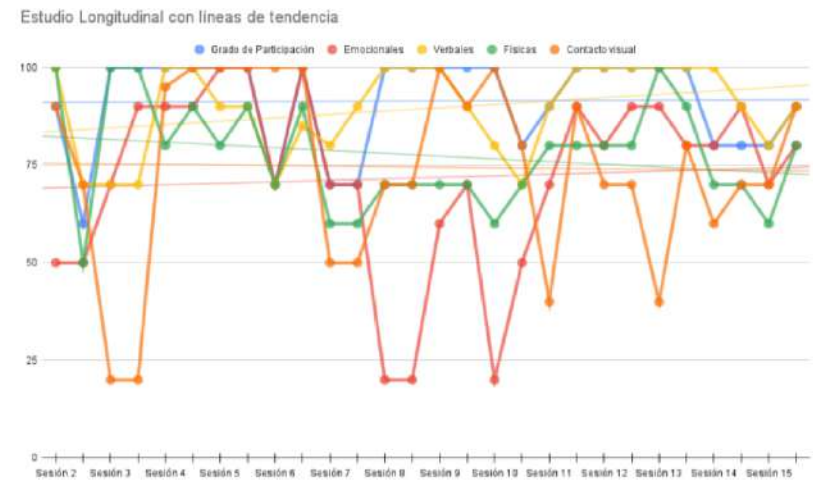
Pre- and post-session benchmarking



Note: comparative pre-test and post-test relationship of VEA results in the sessions. Own elaboration.

Figure 2.

Study of registration sheets



Note: Relationship between Degree of participation, emotional management, verbal and physical interactions, and eye contact. Own elaboration

eye contact variables. Still, in this case, the trend line shows a slight upward inclination, which may suggest that, with more sessions, greater training would cause a progressive improvement in the patient's attention and relaxation. Which helps explain the downward trend in physical variables. Regarding the verbal variables, despite the fact that in the comparative analysis, there is a tendency to decrease between the beginning and the end of the session, probably due to greater relaxation, in the analysis throughout the process, there is a pronounced upward trend, which would indicate that with the progress of the sessions, The patient is more able to express herself verbally.

RESULTS

The approach of music therapy, based on humanistic psychology focused on the client and self-realization, has proven to be effective for AA and has opened a door for the participant in the face of her restlessness and interest in deepening her personal development. The use of music as a therapeutic tool has allowed her to explore and express emotions, improve her relationship with her environment and with herself, and work on her self-knowledge and self-exploration. Through therapeutic singing, the participant has achieved a deep connection with her body, focusing on breathing, relaxation, and vocal expression.

This has contributed to her self-recognition and given her new tools to enjoy singing more expressively and therapeutically. This was a way to approach her craft from another perspective: in music therapy sessions, singing is a channel through which AA expresses, explores, and everything is valid; anything goes. This is a great luxury that cannot be given in singing class sessions, and for her, it was a great personal discovery and a very powerful tool for self-exploration. Music therapy has provided a safe and judgment-free space for the participant, allowing her to explore her emotions and important memories. The trusting environment created by the therapist-in-training has facilitated AA's personal growth and contributed to her emotional well-being.

Finally, it can be stated that the participant has found benefits both personally and professionally through music therapy. In addition to her quest for self-actualization and personal development, AA has discovered the therapeutic effects that music can have on her profession as a singer.

Although the case study focuses on a single participant, AA, the results obtained may be useful in understanding the potential benefits of vocal music therapy in professional singers facing emotional challenges and seeking further personal development.

DISCUSSION

The present case study is based on the principles of humanistic psychology. It goes hand in hand with the studies and work do-

ne by Rogers (1959) and Maslow (1968) in terms of transcending basic needs and undertaking a mature search for potentialities as a person, as this was the primary goal of AA. It can be said that the work of these two psychologists was a fundamental guide for the approach and design of the sessions of this study.

Regarding the music therapeutic approach, it can be said that Bruscia's work with respect to music as a form of self-expression and self-exploration was also very revealing for the roadmap of the sessions carried out since music was the means to help connect the patient with her emotions, her sensations, memories, and personal relationships. Passive and active methods were used, and the use of other arts, such as drawing, was also used in the sessions, based on studies such as those of Eizaguir-re and Company (2015).

Regarding the voice used therapeutically, the present study had the particularity that the participant was a professional singer. If compared to studies done on people who are not professional singers, such as those by Sokolov (2021), and Austin (2016), there is a more fluid effect on the process because you sing in an unsuspecting way and without professionally judging what you are doing.

Regarding music therapy sessions for professional musicians or singers, this work focuses on a more emotional approach and in the context of personal search. It is closer to the studies carried out by Lee (1996), who surveyed the emotional exploration of a pianist in palliative care.

As can be seen, the present case study is based on previous works and studies and has been nourished by them to define the route of the process and the therapy sessions. However, it has also focused on vocal practice due to the characteristics of both the participant and the therapist. It can serve as a complement to other studies that deal with vocal music therapy and the work on personal development carried out by other studies but with different characteristics.

CONCLUSION

It can be concluded that the present study has managed to reflect the positive effects of vocal music therapy on a professional singer in terms of personal development and self-realization, approached from a humanistic music therapy approach. It represents a relevant contribution to a subject that has not been explored in depth. Although the results obtained cannot be generalized due to the specificity of the study, its novel nature and the specific information collected may be useful for other researchers interested in this field.

The entire therapeutic process represented uncharted territory for the therapist in training. It marked the beginning of a path that is just beginning and that, as mentioned in the introduction to this study, is "the seed" that seeks to blossom in a "musical garden." Therefore, the objective of generating a future projection for the work as a music therapist of the therapist in training and author of this study has been fulfilled. It also stands out for its specificity and its relevance to fill the existing gaps in the bibliography on this subject. Undoubtedly, it offers available input that can benefit other researchers and professionals interested in vocal music therapy and its impact on the personal development and self-realization of professional singers.

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MUSIC THERAPY RESOURCES FOR THE REGULATION OF ANXIETY DERIVED FROM THANATOPHOBIA

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Abstract
Death is undoubtedly an inevitable and frightening truth for all living beings and can awaken hard moments of intense pain in people. Losing a loved one or having been in a near-death experience can generate fear, rejection, and even phobia, which can cause serious havoc if not treated in time. On the other hand, music therapy has been shown to have several benefits on the physical, emotional, and mental health of patients. Thus, the following work proposes the application of music therapy as a method to appease, improve, and regulate the anxiety produced by the fear of death, better known as thanatophobia. To this end, we have worked with two cases of people who suffer from stress caused by the fear of death, to whom music therapy sessions have been applied in order to regulate their anxiety, obtaining a positive result, although demonstrating better results when used as a complement to psychological therapy. Studies by authors such as Borda, Pérez, and Avargues (2011); Andrades-Tobar, García, Concha-Ponce, Valiente, & Lucero (2021); Bruscia (2016), among others, have guided the study of this work.

Keywords: Music Therapy, anxiety, thanatophobia, mourning, wellness

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BACKGROUND

Death is an event that life is assured of for oneself and those around us. Near-death experiences are events that do not go unnoticed, and in many cases, there can be an excessive fear of this topic.

It should be noted that the loss of a loved one is not easy, and each person assimilates it differently. Therefore, the grieving process and the length of time it lasts are not the same in all cases. It is important to recognize that grief and its manifestations are natural and human, generally specific to the situation, but when they worsen, they affect people's daily activities; if these occur for a long and anomalous period, they can be considered a problem (Gil-Julia et al., 2008).

In the same way, the mortality of human beings can cause, in some individuals, a latent fear of facing and dealing with death, whether it is their own or that of a close one. It is not uncommon for people who are going through this process to present a picture of anxiety.

In relation to anxiety, the American Psychiatric Association (2014) states that it is the anticipation of a future threat, provoking cautious behaviors or attempts to avoid situations or objects that cause anxiety, for example, germs, open spaces, closed spaces, or even specific activities, among others.

In these cases, it is inevitable to talk about thanatophobia, which, according to Sadock (2011), Borda (2011), and Grau (2008), is the constant and excessive fear of the presence or anticipation of scenarios or elements that imply death, agony, the death of a loved one, fear of aging, of being defenseless, causing patients to feel a threat to their existence. Borda (2011) also mentions that thanatophobia, like other phobic disorders, immediately generates anxiety when in contact with a stimulus related to death, also presenting itself as an anxiety crisis. Thus, most cases occur in people who are in the final stage of their life or who have been diagnosed with incurable diseases. Tachycardia, palpitations, sweating, and insomnia are some of the symptoms presented by a patient with anxiety (Sadock, 2011).

Grau's (2008) study indicates the importance of helping patients, family members, and health personnel cope with death in a way that does not produce pathological anxiety. To this end, over the years, the Templer test, a questionnaire on attitudes towards death (CAM-1), has been used, as well as others that help measure the degree of anxiety about death. However, these must be used with care, as they can sometimes generate greater discomfort and new negative thoughts in the people to whom the test is applied, especially in patients diagnosed with terminal illnesses.

The previous article indicates the importance of taking care of mental health, not only of patients but also of health professionals, who must deal with death on a daily basis and can undoubtedly affect them to a greater or lesser extent emotionally and psychologically.

Therefore, it is imperative to emphasize the importance of receiving adequate accompaniment that allows people who are facing an experience related to death to cope with their fears, uncertainties, and pain in the best way, thus preventing their condition from progressing toward a state of extreme depression.

It should be taken into account that music is an effective tool for expressing and channeling emotions, feelings, and thoughts. Many times, patients in psychotherapy may not find the words or the precise way to express what they have inside them, with music therapy being a necessary complement when working on various pathologies. In addition to being a language, music can also cause different physiological and physical effects, improve other behaviors, act as a sedative or stimulant, communicate the level of pain felt at the moment, and even generate endorphins, thus representing a significant support or replacement for antidepressants. (Jimenez, 2017)

This is how music therapy has found its way as a complementary treatment that seeks the well-being of the patient, taking its place as a great tool when it comes to attending to those who seek to improve their physical, psychological, and mental well-being. It has also proven to be an extremely effective tool when it comes to providing peace of mind and reducing patients' anxiety and stress levels (De la Rubia et al., 2014)

Eyre (2016) points out some methods and procedures that can be used in patients with anxiety; among these, we find receptive music therapy, such as relaxation, conversation with songs, Bonny method of guided imagery, and music. In the same way, he also mentions musical improvisation as a tool to mobilize affection or explore feelings and songwriting, which can also be used in these cases.

In a case study conducted by Jiménez (2017), The patients with anxious depressive symptoms showed a significant improvement in anxiety levels, as well as a change in their moods and behaviors, an improvement in clarity, and an increase in neuronal activity and brain rhythm, after having worked with activities such as improvisation and musical trips. On the other hand, music, by regulating the heart and respiratory rate, made it possible to reduce the agitation and worry that the patient presented, as well as to stimulate relaxation and avoid muscle rigidity through guided movement through music (Jiménez, 2017).

Studies on music therapy and death phobia are limited, not only in music therapy but also in psychology. However, Borda, Pérez San Gregorio, and Navarro (2011) refer to the cognitive-behavioral method as a treatment for death phobia.

In the study, the patient is followed up for twelve months, in which the main aim is to control her anxiety symptoms, reduce avoidance behaviors, and reduce levels of emotional distress. To this end, relaxation and breathing techniques were used, as well as activities to read stories related to death that give the patient the opportunity to acquire self-control tools as well as reduce avoidance of the subject.

At the end of the treatment, the patient was still unable to accept death. However, it was possible to reduce her avoidance behaviors, control the anxiety symptoms she felt when exposed to issues related to death, and control thoughts pertaining to her death or that of others, showing a significant improvement and thus demonstrating the benefits of music therapy in relieving or regulating phobias or deep fears.

General objective

Apply music therapy as a treatment in patients with anxiety caused by thanatophobia.

Specific objectives of the research

- Determine the patient's anxiety symptoms.
- Plan and implement music therapy sessions focused on the treatment of anxiety disorders.
- Reduce the symptoms of anxiety caused by thanatophobia in patients
- To demonstrate the benefits of music therapy in the regulation of anxiety caused by thanatophobia.

Materials and Method

Participants

We worked with two female patients aged 59 and 20 years who presented anxiety secondary to thanatophobia. In patient A, her condition was related to the presence of a chronic disease, while in patient B, it developed after the loss of a close family member.

Stimuli and measures

Each patient worked individually with a different music therapist, taking into account the individual needs of each one to set the general and specific objectives of the interventions. Likewise, the activities were planned based on the capacities, limitations, and musical tastes of each case.

Patient A

Twenty-five sessions were carried out at the patient's home, divided into three sessions per week of approximately 1 hour; passive and active music therapy activities were used, taking into account that the vital signs are maintained at normal values so that it does not affect their underlying heart disease.

Procedure

The STAI State-Trait Anxiety questionnaire and Templer's death anxiety scale were completed in the interview session and at the end of the last session. In addition, the patient kept a self-assessment diary from the first session to the previous.

The sessions were structured as follows:

- Completion of the comprehensive evaluation questionnaire (5 minutes).
- Taking vital signs (5 minutes).
- Welcome song (5 minutes).
- Central part: (approximately 35 minutes) consisting of two of the following four activities:
    - Instrumental improvisation and use of the voice
    - Verbal Musical Analysis by Confrontation
    - Songwriting
    - Passive Listening to Instrumental Music
- Farewell song (5 minutes).
- Taking vital signs (5 minutes).

To select the two activities of the central part, in each session, the therapeutic objectives, mood, symptomatology, and vital signs of the patient measured at the beginning of the session were considered so that these activities are adjusted to the needs of that moment in favor of an efficient therapy.

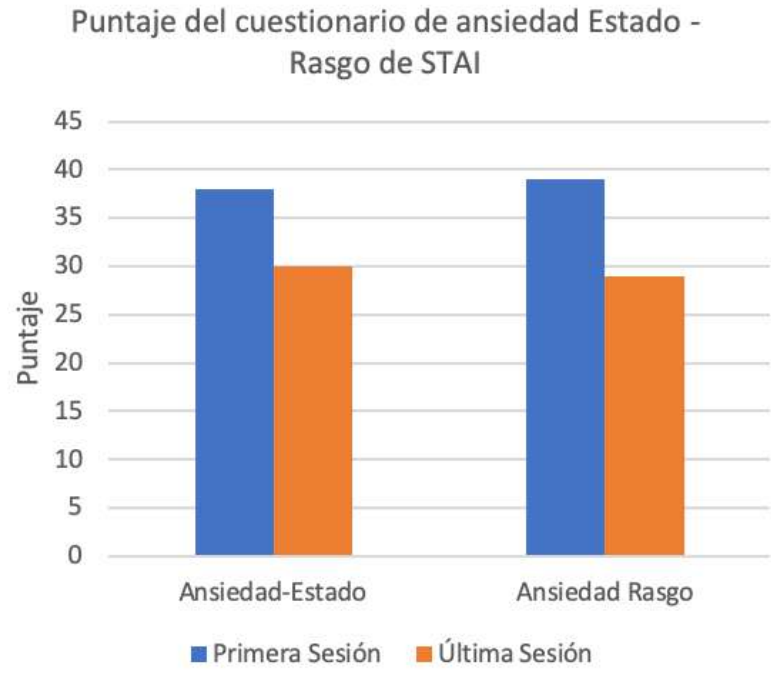
Data analysis

Data were analyzed using five data collection instruments:

1. A progressive improvement was observed in the comprehensive assessment questionnaire, which was made up of the following items: sleep quality, symptoms of the moment, and affective evaluation.
2. Regarding the self-assessment diary, there was a gradual decrease in negative thoughts and an increase in positive thoughts in her day-to-day life, in addition to an improvement in the patient's sleep schedules and everyday symptoms.
3. There is a decrease in the scores on the STAI State-Trait Anxiety questionnaire, being that in the first session, the patient had a score of 38 in State Anxiety and 39 in Trait Anxiety; on the other hand, in the last session, the scores were 30 in State Anxiety and 29 in Trait Anxiety (Figure 1).
4. In the same way, there was a decrease in the score on the Templer Death Anxiety Scale, where 9 was the score in the first session and 5 in the last session (Figure 2).
5. In the music therapy registration form, an improvement was recorded in all its items, especially in the participation and emotional and physical responses of the patient mentioned in Table 1.
6. On the other hand, the data obtained from the observation sheets that covered the characteristics of the activities carried out in each session and the patient's vital signs were as follows:

Figure 1.

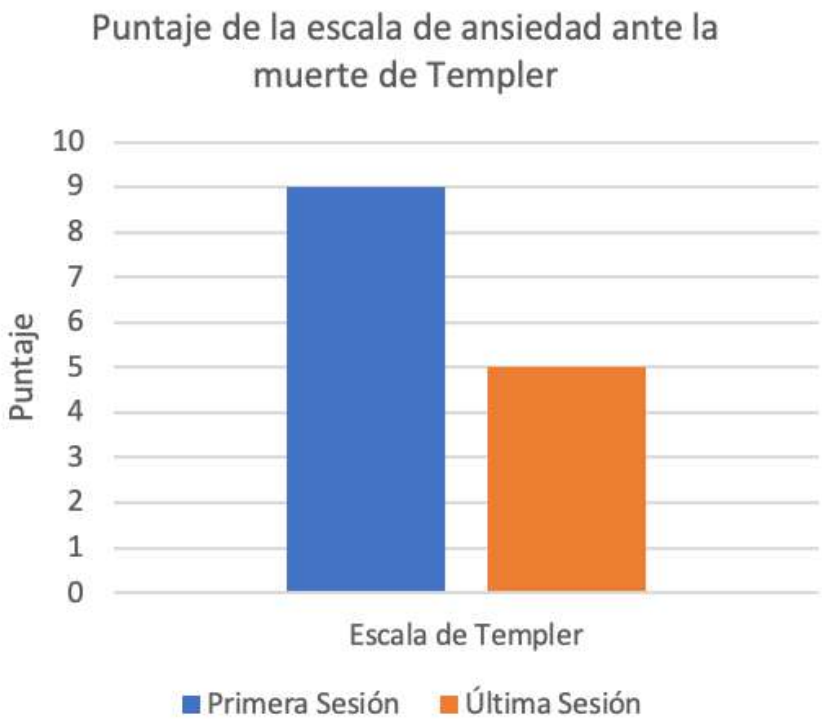
Anxiety Status Questionnaire – STAI Trait



Note: In the figure we find the scores of the STAI questionnaire of the first and last session. Own elaboration.

Figure 2.

Templer Death Anxiety Scale.



Note: In the figure we find the scores of the Templer Death Anxiety Scale for the first and last sessions. Own elaboration.

Table 1.

Items on the Registration Form.

Patient Status	Musical Participation	Answers
Mood predisposition	Singing	Emotional
Fitness	Instrument	Verbal
Emotional state	Improvisation	Physical
Degree of participation	Dance/Body	Eye contact

Note: Adaptation of the PESCU registration form (UNIR).

- In the verbal musical analysis activity by confrontation, music recorded using a speaker was listened to. It is characterized by being mostly of a moderate tempo, with a binary accent and a mezzoforte dynamic. Being a song chosen by the therapist to deal with a particular topic, it was vocal and instrumental, with a usually higher key. At the end of the activity, both the patient and the music therapist shared their impressions regarding the song they heard, thus achieving an emotional expression on the part of the patient.
- The passive listening activity of instrumental music was mostly of a slow tempo, binary accent, piano dynamics, had an instrumental melody, and obtained a calming response when having a relaxing role.
- The instrumental improvisation was based on a repertoire of songs already known by the patient, for example: "La promesa" by Bonanza, "Bésame mucho" performed by Lisa Ono, "Selección de morenadas" by Llajtaymanta, and others whose lyrics reflected positivity around life such as: "Gracias a la vida" interpreted by Mercedes Sosa, "Quien dijo miedo" by Gilberto Daza, whose tempo was between 90 bpm to 200 bpm approximately. The instruments used by the patient for improvisation were the reco reco, palo de lluvia, the zampoña, maraca de huevo, and, above all, the bass drum with which she had the greatest affinity. The patient demonstrated joy and tranquility through smiles, spontaneous singing, and body movement to the rhythm of music. The music therapist, on the other hand, used the guitar, body percussion, and the egg maraca.
- The songwriting had a tempo of 172 bpm, dynamic piano, and mezzo-forte, with a recorded instrumental melody of major key, on which a new lyric was created. Smiling, joy, and body movement were some of the responses from the patient.
- Both at the beginning and at the end of the session, the patient's blood pressure, heart rate, respiratory rate, and oxygen saturation were measured. The values of the aforementioned vital signs, mostly at the beginning of the sessions, were at the lower limit of the range that is considered normal; on the other hand, at the end of the sessions, these values increased, especially the oxygen saturation that reached 93% on several occasions.

Patient B

Patient B witnessed the death of a family member, which triggered a series of mental, emotional, and psychological problems. Depression, self-harm, and eating disorders are some of the after-effects of her experience, although anxiety is undoubtedly the main one.

After a few years, she began psychological therapy sessions, allowing evidence and diagnosis of an anxiety disorder, whose main symptoms have been panic attacks, stress, sleep problems, and difficulty managing and facing conflicts.

At the time of the study, the patient is not receiving psychological support, and the symptoms mentioned above continue to be part of her daily life. The patient is a music student, so she has experience playing instruments such as piano and guitar, as well as knowledge of how to handle her voice.

The music therapy sessions in this study seek to appease the symptoms presented and, in this way, regulate the anxiety derived from the death of the family member.

Resources such as a laptop, audio equipment, guitar, percussion instruments, and a video camera were used to carry out the study. For the sessions, activities were proposed that sought to facilitate relaxation, promote emotional expression, and improve the management of emotions, such as welcome songs, breathing and relaxation exercises, vocal improvisation, instrumental improvisation, and guided visualization.

Procedure

For the intervention, eight music therapy sessions of approximately 30 minutes were planned based on the objectives set.

The first session had the purpose of getting to know the case through a conversation that allowed the patient to share her experience with anxiety and the origin of the symptoms. Likewise, we sought to understand their tastes and musical interests and to apply an STAI questionnaire to know their degree of anxiety.

For the sessions, different methods and activities were proposed, such as singing and the use of the voice as a means of expression, the use of receptive music, relaxation exercises, and breathing exercises. In addition, a repertoire was made based on the patient's tastes, which would always be used at the beginning of each session. Among the patient's favorite songs were: Babalú Ayé by Alex Alvear and Mango Blue, Yo vengo a ofrecer mi corazón by Fito Paez and Te guardo by Silvana Estrada.

The sessions were structured as follows:

- Welcome (5 min)

  The music therapist greeted the patient with one of the patient's favorite songs. This moment was intended to provide the patient with an environment of trust as well as to make her feel heard and understood.

- Breathing and relaxation (5 min)

  Instrumental and slow-tempo songs, characterized by the presence of a piano or cello, were used in order to offer the patient space for relaxation and provide her with tools to manage her emotions and relieve stress and anxiety.

- Central part (10 min)

  During this section, vocal or instrumental improvisation activities and guided visualization were alternated.

- Vocal improvisation

  The music therapist played a basic rhythm and harmony on the guitar, the tempo and tonality of which would depend on the patient's mood. This space sought to generate a musical conversation with the patient, in which she could express herself while the music therapist accompanied and contained her.

- Instrumental Improvisation

  Similar to vocal improvisation, songs from the patient's repertoire were also used. As the music therapist and the patient sang the songs, each of them proposed rhythms on different percussion instruments.

- Guided Visualization

  This activity sought to provide the patient with positive thoughts and images that help her regulate her emotions in states of stress or panic.

- Reflection and farewell (10 min)

  In this space, the patient shares what she felt during the session and reflects on what she shared with the music therapist during the middle part of the session. In addition, in each session, the patient chooses one of the songs used to accompany her for the rest of her week. The session ends with a farewell song.

During the first sessions, the patient was restless, nervous, and embarrassed. His voice felt tense; there was little eye contact, little trust with the music therapist, and also low emotional expression.

As the sessions and the days progressed, the patient became more enthusiastic about starting the sessions, showed a smile every time she listened to the selected songs of her liking, and was more open to participating in the activities.

The activities that the patient enjoyed the most were those in which she could actively participate by making music with instruments or with her voice. As for vocal improvisation, the patient gradually showed more fluency and expanded the vocabulary used in her improvisations, which allowed her to express more openly what she felt. At first, the lyrics I improvised seemed to be sadder and darker, although, over time, they became slightly more positive.

At the end of the sessions, the collaboration between the patient and her music therapist was much more noticeable; smiles were common in the patient, and she actively participated in the activities, even more so when her favorite songs were included. She was also more able to express her emotions about her family member's death, and some of her symptoms had improved slightly, as well as panic attacks and sleep problems.

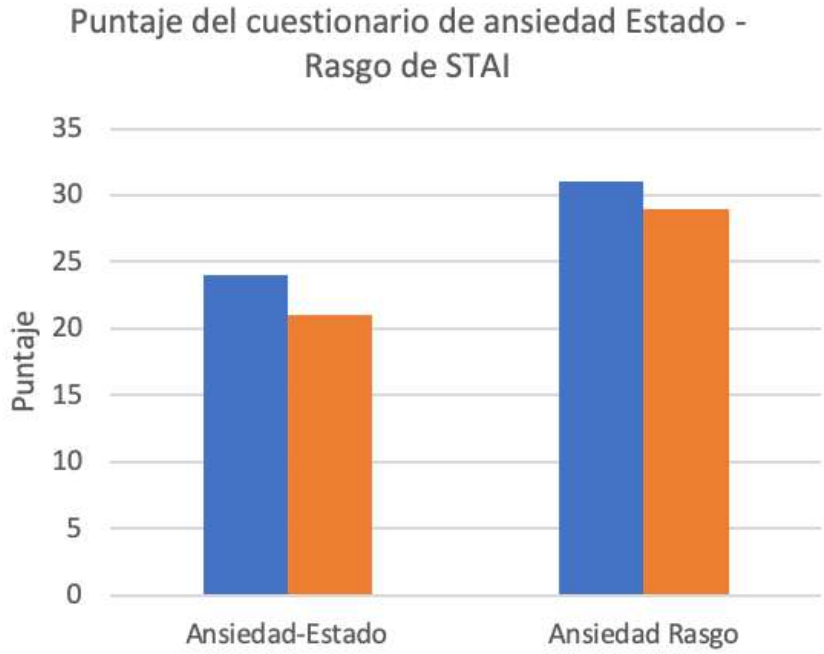
Data analysis

According to the STAI questionnaire applied to the patient, the degree of State Anxiety before the start of the sessions was 24 points, indicating an above-average category. Meanwhile, after the intervention, it resulted in 21, reflecting an average category (Figure 3).

On the other hand, prior to the sessions, the degree of anxiety trait was 31 points, that is, an above-average category. At the end of the sessions, it was 26 points, which is still an average, although to a lesser degree (Figure 3).

Figure 3.

Anxiety Status Questionnaire – STAI Trait



Note: In the figure we find the scores of the STAI questionnaire of the first and last session. Own elaboration.

Additionally, thanks to registration sheets and evaluation diaries, the patient was shown to be more confident when it came to expressing herself, as well as less shy when it came to showing her emotions regarding her anxiety and the death of her family member that triggered it.

All the sessions were linked to the memory of her relative, which, at first, did not seem to generate emotions in the patient. However, with each activity, the environment became more trustworthy and familiar, making it easier for him to talk about what had happened and mani-fest responses such as crying, laughing, smiling, and so on.

RESULTS

Despite the shyness in patient A's first sessions, a significant improvement in her mood was observed, reflected in her singing and playing musical instruments with greater energy and enthusiasm. In addition, the patient showed a significant decrease in her anxious symptoms, as well as a considerable increase in positive thoughts towards her life and acceptance of her illness.

In the case of patient B, there was a slight decrease in the degree of anxiety. It is important to remember that, at the time of the study, the patient was not attending psychological therapy, which could have limited a greater reduction in anxiety and its symptoms. On the other hand, through vocal improvisation and the creation of music, the patient expressed and processed her emotions related to the loss, which helped to relieve stress, improve sleep problems, and facilitate acceptance and adaptation to the grieving situation.

Thus, both cases were positive, as indicated in Table 2, demonstrating the benefits of music as a means to regulate, channel, and express emotions, worries, fears, and other emotional aspects.

Table 2.

Comparison of outcomes between patients

	Patient A	Patient B
Emotional expression related to death	Agree to talk about it calmly	Agree to talk about it calmly
Symptoms of anxiety	Decreased	Decreased
Mood	Improved positively	Improved positively
Daily Activities	Better performance	Better performance

Note: Authors' own elaboration

DISCUSSION

Music therapy has emerged as an effective therapeutic approach to address anxiety in diverse populations. This study focused on two cases: a 59-year-old woman with heart disease (patient A) and a 20-year-old woman who experienced anxiety after the death of a family member (patient B). Both participated in music therapy sessions, including passive and active music therapy activities, tailored to their individual needs.

The STAI questionnaire was used to assess anxiety before and after the sessions, revealing a significant decrease in both cases. Although the causes of stress were different, the sessions demonstrated a positive impact on both patients.

In both instances, relaxation activities with music were implemented, which were replicated in their pre-sleep routine, improving sleep quality and relieving insomnia. The active music therapy sessions carried out with percussion and voice instruments allowed the two patients to express emotions positively.

As the sessions progressed, changes in the patient's perception of death were observed. Patient A generated positive thoughts towards life, while patient B was able to express herself emotionally and verbally about the death of her family member, freeing herself from untreated grief.

In the case of patient A, music therapy contributed to improving sleep, reducing physical pain, and addressing sadness, eviden-

cing a significant decrease in anxiety levels. For patient B, music facilitated the grieving process and emotional expression, resulting in decreased panic attacks and stress management.

In summary, this study supports the efficacy of music therapy as an intervention for anxiety derived from thanatophobia, highlighting its positive impact on quality of life and the regulation of anxious symptomatology in both patients.

CONCLUSIONS

Both patients presented a series of anxiety symptoms at different intensities, such as insomnia, palpitations, chest tightness, paresthesias, and panic attacks, among others.

Music therapy sessions were planned and applied to each patient, focused on the treatment of thanatophobia anxiety disorder. To do this, different activities adapted to individual needs and abilities were used.

As the sessions progressed, a gradual decrease in symptoms of anxiety caused by thanatophobia was observed. This allowed the patients' mood to improve, allowing them to better function in their daily activities.

With this work, the benefits of music therapy in the regulation of anxiety produced by thanatophobia were evidenced. It also highlights the importance of psychological treatment that accompanies the process and that can improve the results obtained.

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MUSIC THERAPY AND PRENATAL SINGING TO REDUCE STRESS DURING PREGNANCY

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Abstract
In a woman's life, pregnancy is arguably one of the most important moments. Conceiving and giving birth to a child can be both a highly rewarding and fulfilling experience, as well as a traumatic experience, lived with stress, anxiety, and, in many cases, feelings of loneliness that are counterproductive for the health of the mother and for the proper development of the baby. The influence that rhythm and sound have on the intrauterine level is well-known, and working with perinatal music therapy and singing provides numerous benefits for the well-being of the mother and the baby. This study aimed to design, implement, and evaluate an intervention proposal with singing as the main instrument to validate the effects of music therapy as an effective tool in the treatment of stress and anxiety in women in their second trimester of pregnancy. This proposal was implemented for nine weeks with a woman in her fifth month of gestation at the Arrels-Espai Terapèutic Educatiu center in Valencia. The results revealed the benefits that music therapy and singing offer to women and their babies.

Keywords: pregnancy, music therapy, singing, anxiety, stress.

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BACKGROUND

Of the entire reproductive cycle in a woman's life (puberty, pregnancy, menopause), pregnancy is the one that entails the most emotional imbalance since the changes in women occur very quickly at the physical level (increase in blood circulation, modification in bone structure, weight gain, etc.) causing a real state of physiological stress (Carrillo-Mora et al., 2021). Motherhood is undoubtedly a turning point in a woman's life; deciding to create a new life and bring it into the world is already an act of great responsibility and generosity, not exempt from a certain level of stress, a responsibility that begins at the very moment of conception, and even earlier, and that will continue throughout the parenting stage. There is ample evidence of a high percentage of women, approximately 20-25%, who suffer anxiety and stress during pregnancy, childbirth, and postpartum, and of these, between 10-20% will have depressive episodes (Alder et al., 2011; Arranz et al., 2017; Navarrete et al., 2012).

Today, we know that these states of postpartum depression that women suffer from actually begin to suffer during pregnancy (Evans, 2001). This situation of gestational stress and anxiety was aggravated during the pandemic by COVID19 with an increase in cases of pregnant women with symptoms of anxiety (stress, insomnia, obsessions) that alerted them to the need for psychological interventions (Romero-González, et al., 2021). It is currently known that a state of stress and anxiety of the mother maintained over time and, in some

cases, as we have seen with processes of depression, would directly affect the natural development of the baby and could cause premature births, babies with low birth weight, more episodes of crying, irregular sleep or more risk of perinatal morbidity and mortality. Among other drawbacks, it can even affect the child's future neurodevelopment (Ar-ranz et al., 2017).

As Federico (2012) explains, music therapy can be of great help to women in this period because it is a functional, systematic, and scientific discipline with methods and techniques that use music within a therapeutic process that, in the case of pregnancy, is known as prenatal music therapy and would focus fundamentally on the work of three areas: that of the mother, that of the baby, and that of the bond. Thus, working with music would contribute to reducing stress and anxiety in the mother, ensuring a higher quality pregnancy and favoring the moth-er-baby bond.

Motherhood, Anxiety, and Pregnancy-Specific Stress

Motherhood is a long journey that begins at puberty and continues with fertilization, pregnancy, childbirth, breastfeeding, parenting, education, and separation. Therefore, it is not a simple and isolated event but rather a succession of complex sequences (Oiberman, 2005), potential causes of stress and anxiety. Perinatal stress has the same symptoms as the most common stress. Still, as it is experienced at a very specific and important stage of life, some researchers have gone deeper by trying to assign characteristics that were typical of pregnancy, even determining the existence of pregnancy-specific stress, whose main properties are a set of worries and thoughts that address specific details of pregnancy such as physical symptoms and also emotional symptoms (Lobel et al., 2008). This psychological stress, added to the changes experienced by the mother and the daily problems, plays a vital role in the development of the fetus and the health of the mother herself, and can generate problems such as anxiety, postpartum depression, weight gain, cesarean delivery, premature birth or low birth weight of the newborn (Romero, 2020).

Some studies warn of the negative consequences of maternal stress on the baby, on the mother's health, and on postnatal life. Still, few propose practical solutions beyond suggesting the implementation of the mental health of pregnant women, which until now has been little attended to considering that the symptoms of stress and anxiety produced in pregnancy often go unnoticed (Gómez-Sánchez et al., 2020).

Music Therapy to Relieve Stress in Pregnancy

Music not only has recreational and cognitive functions but is also a great therapeutic tool. Music is a powerful stimulus for our brain, as evidenced by the new neuroimaging techniques that allow us to know what happens in our brain when we listen, interpret, or feel the music and how it is able to modify the structure and function of the brain through musical learning and experience, in this way when we interact with mu-sic our brain secretes dopamine. This reaction is able to relieve anxiety. stress and pain (Miranda et al., 2017). More specifically, prenatal music therapy seeks to make the baby begin to relate to the outside world. Since the first relationship established is with the mother, singing seems to be the fundamental instrument to intervene. In addition, breathing is actively involved in singing, so the resource of active techniques will be used within prenatal stimulation techniques (Cedeño, 2020).

In the fifth month of pregnancy, the baby can already hear the mother's voice, high-pitched sounds, noises, and the low frequencies of music, and in the sixth month, he already clearly perceives external stimuli, music, light, and noises. At this time, the baby may react with kicks if the sound stimuli that reach him displeases him (Ibarrola, 2012). The mother's heartbeat is the main fetal sound center, along with digestive sounds, breathing, and placental activity. It is constant day after day, but presumably, this heart rate changes according to the state of the mother; if she experiences nervousness or anxiety, the fetus is exposed to more accelerated, powerful, and constantly changing rhythmic patterns.

Many women describe how the baby reacts to these sound stimuli differently during their third trimester of pregnancy, depending on the type of music (Gilboa, 2013). Music therapy has previously been used to accompany pregnant women, and some studies have investigated its influence on stress and anxiety relief, showing that listening to relaxing music regularly can reduce the rate of preterm birth, cortisol levels, and therefore, stress and fear levels (Teckenberg-Jansson, 2019).

Prenatal Singing

Dr. Alfred Tomatis (1996) does exhaustive research on the structure and functioning of the ear, how the fetus listens in its intrauterine life, how sounds reach it, and what frequencies it hears best. In his research, he states that the impact of the mother's voice is indisputable because, for the baby, the sound of the mother's voice is a necessity, while the rest of the sounds act as simple conditioning. The mother's voice is indispensable for the postnatal development of linguistic structures; it is rich in harmonics and most likely reaches the uterine cavity through the spine by bone transmission since this path favors the passage of high-pitched sounds and constitutes the basis on which the language of the future baby will be modeled.

The mother's singing and voice are essential for the baby because there is a strong symbiosis between the female reproductive system and the vocal system that occurs at the time of delivery, to such an extent that if the mother's throat is blocked and with jaw tension, it will contribute negatively at the time of the expulsion of the baby (Cedeño, 2020). The work of the lower

back to lengthen the muscles frees the movements of the diaphragm; if this work is done simultaneously with the jaws, we will also release the vaginal opening facilitating labor (Bertherat et al., 1996).

In light of these observations, it is logical to think that singing would be of great help because of its implications for breathing, the diaphragm, and the pelvic floor at the time of delivery. Recent publications confirm that more and more midwives encourage women to use their voices as an aid in labor, not only as an analgesic but also because of the relationship between the mouth, throat, vocal cords and vulva, vagina, and cervix (Prieto, 2023).

Among the benefits of prenatal singing, Freijomil (2016) mentions the following: it improves posture and breathing, favoring body awareness; It is a simple means to express and elaborate feelings and emotions typical of this stage; Talking and singing to the baby allows us to create an early and solid bond; It can also be a great ally in labor and birth, as it is a natural analgesic means that the body has (linked to the automatic production of endorphins).

Through the singing style, the mother can induce the baby to calm down, and in this sense, lullabies have proven to have a universal influence on babies (Wulff et al., 2021). Another factor that is considered important during pregnancy and postpartum, not only for the mother's mental health but also for the baby's development, is the mother-child bond. Some studies support the idea that intervention with music and singing would reduce stress and anxiety during pregnancy, thus facilitating the mother's well-being and the mother-child bond (Biancardi et al., 2023).

Finally, contributing to the accompaniment and well-being of women and their babies has been the motivation of this study, whose main objective was to design, implement, and evaluate an intervention project with singing as the main instrument to validate the effects of music therapy as an effective tool in the treatment of stress and anxiety in women in their second trimester of pregnancy.

Materials and method

This case study was designed with the goal of relieving stress in pregnant women, improving their physical and emotional well-being, and fostering bonding with the baby. As inclusion criteria, women had to be in their second trimester of pregnancy and not have pregnancy complications. Individual interviews are conducted to get to know the applicants and determine which would be the most suitable beneficiary according to the inclusion criteria. The intervention is carried out at the Arrels-Espai Terapèutic Educatiu centre, which offers perinatal accompaniment workshops, making it very ideal for this type of intervention.

Participant

A 42-year-old primiparous woman is in her 23rd week of gestation. She goes alone since the companion's working hours do not allow her to attend. Due to the complexity of her work, although the pregnancy is going normally and her state of health is good, the patient is on sick leave because she has previously suffered two miscarriages. It's a long-awaited pregnancy.

Stimuli and measures

From the methodological point of view, all the activities designed for the intervention were humanistic and eclectic. Throughout the 18 sessions, the main instrument that has been the backbone of the study has been singing, not only because of the physical benefits that singing brings to the mother by activating respiratory and cardiac function but also because singing promotes self-esteem and general confidence, ensuring well-being for the mother and the baby (Welch 2019). For the design and planning of the activities, the four methodological criteria for sequencing musical activities according to Mateos-Hernández (2004) have been taken as a reference: self-awareness and awareness of the other; alternating the phases of externalization with the phases of internalization; maintaining the patient's motivational-affective attention; and to link activities in search of unity among them as well as variety.

Also, in relation to the musical activities, most of them were active musical interventions with the learning and singing of lullabies and improvisation with different musical instruments (ocean drum, ukulele, large and small yembé, tambourine, metal tongue drum, triangle, bells, claves, two Tibetan metal bowls, rain stick, maracas).

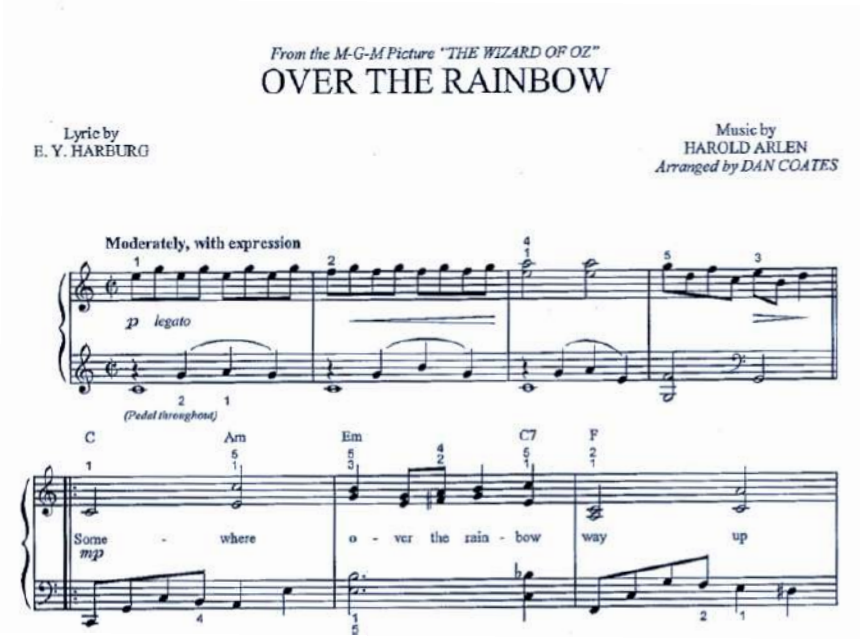
As for receptive activities or listening to music, they have been used for the work of expression and body awareness, breathing, relaxation, and visualization. It is important to note that throughout the 18 sessions, several routines were established that were repeated both at the beginning and the end of each session. These include measuring heart rate and blood oxygen saturation and the completion of a survey by the participant before and after each session to assess their state of well-being.

Studies by Pérsico et al. (2017) discuss the benefits of music therapy in pregnant women and how it contributes to their well-being. Taking into account the studies mentioned above, the activities were designed with singing as the main instrument. Below is a summary of these.

Songwriting. Using the songwriting technique based on a popular song, in a study in Colombia, women were able to express their emotions, concerns, and fears (Salgado et al., 2022). In this intervention, the song Over the Rainbow by Arlen (1938), in C major, was chosen as the basis for composing.

Figure 1.

"Over the Rainbow" score



Note: song by Harold Arlen. Lyrics by Harburg and Coates (1938).

Breathing techniques. Based on different exercises by Calais-Germain (2006) and the knowledge of the researcher in Advaita meditation, various types of breathing were practiced with objectives focused on other areas such as the practice of efficient attention, body awareness, mobilization of the rib cage and diaphragm, as well as breaths both for relaxation and to prepare for the moment of labor.

They were singing lullabies. Activity inspired by the RBL method (Rhythm, Breath, Lullaby), this conjunction of rhythm, breathing, and lullabies was used for the learning of three lullabies: Arroró, Din Dan, and Pajarito que cantas, all of them of popular origin (Loewy, 2015).

Creative visualizations with music listening. This activity is based on the work carried out by Federico (2012). To do this, suitable recorded music was selected so that this type of work produces the desired effects, focusing on the images we want to visualize.

Instrumental improvisation. In this activity, the procedural improvisation technique was used (Mateos-Hernandez, 2011), in which the patient freely chose among the instruments exposed.

Body language and dance. Bearing in mind that the voice instrument involves the whole body and makes one's body awareness important for singing, activities were introduced where the main element was body movement, some with singing and others with percussion to mark different rhythms and tempos.

The evaluation was carried out qualitatively and quantitatively. The following instruments were used for data collection: sound-musical history form, record sheet, observation sheet, reflection diary, survey used at the beginning and end of each session, and final survey.

Procedure

The development of the sessions was individual, thus favoring the space of intimacy and safety with the patient. A total of 18 sessions of 70 minutes each were held, with a frequency of twice a week. It is important to note that, given the nature of the patient, her physical conditions were taken into account, and the activities were adapted as the pregnancy progressed so that she felt comfortable and calm. The sessions were structured according to the protocol of (1) welcome, (2) development, where the main activities mentioned above were carried out, and (3) farewell. In all the sessions, a space was reserved for reflection, verbalization of emotions, and expression of concerns that were given, thus creating a safe and trusting space.

Some of the objectives set for the activities were to regulate the respiration rate in the proposed musical activities, increase body awareness, foster bonding with the baby, encourage the expression of emotions, and Receive relief from stress and anxiety throughout the session.

In relation to the activities, the following is a selection of those carried out:

- Welcome song. Each session began with the welcome song to get in touch, motivate, and warm up. The patient, with the help of the researcher, composed her lyrics as messages for her baby, expressing moods that, in turn, served to connect to the baby.

- Breathing techniques. The patient has explained the different breaths both to relax and to use at the time of delivery. The patient was instructed on how the diaphragm works and how to work on both cost-abdominal and diaphragmatic breathing through different exercises. Sitting on cushions, we breathe, first activating our rib cage and then lengthening the exhalation with the sounds Uuuuuu, Ooooooo, etc. Using breathing exercises, we also apply the emission of sound with different vowels together with consonants such as ma, mo, me, du, etc., until we manage to bring a deep vibration to the mother's abdomen. Then, a long and slow exhalation is worked, making it last 5", 10", and 15", thus promoting relaxation and checking how the heart rate decreases.

- Singing. Every day, after breaths, we talk about the importance of voice and communication with the baby. The patient learned three lullabies throughout the sessions, which served to connect the mother with the baby, calm him in moments of agitation, and as a tool for after birth. The lullabies were performed with the use of small percussion instruments of the patient's choice and

also with the use of the ocean drum or water tambourine. Other times, it was sung with movement as if rocking or cradling the baby.

- Views. The first of the visualizations was based on the patient's here-and-now well-being, and the song Wichi tai (Siebert, 2006) was heard. The second focused on the moment of childbirth by listening to Om Namo Bhagavate (Premal, 2002). After the first visualization, the remaining sensations and what the work had contributed were verbalized. At the end of the second visualization, the patient made a drawing expressing what she had experienced.

- Improvisation. Improvisations were carried out with instruments of the patient's choice, with the creation of sounds and rhythms to become aware of her creative process and express her state of mind both with instruments freely and in dialogue with the researcher.

- Body language and dance. Free movement to become aware of the body, sometimes using fabrics suggesting the movement of water or as a means of expression using songs such as Respira (Doco, 2017) and Over the Rainbow (Kamakawiwo'ole, 1993).

Data analysis

Throughout the intervention, each session was classified, and information was ordered from the reflection journal, log sheets, observation sheets, and questionnaires. Likewise, the recordings of the sessions were viewed, and the most relevant information was extracted, such as comments, attitudes, and degree of participation of the patient.

The data obtained with the registration sheets, observation sheets, and questionnaires have been quantitatively analyzed using descriptive statistical techniques. In this way, it has been possible to know the percentage of attendance and observations on the daily state of health, as well as the quantitative data referring to the measurement of oxygen saturation in the blood and heart rate.

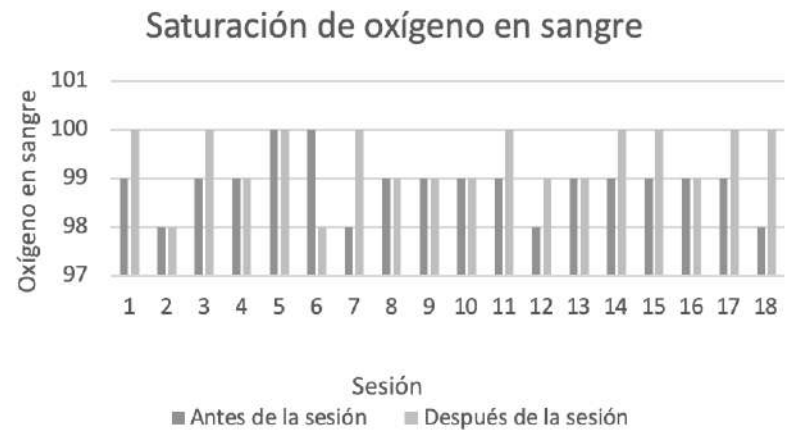
Qualitative data were obtained from reflection diary entries, log sheets, and the open-ended questionnaire survey. In this way, an analysis has been carried out that has allowed us to observe the evolution of the patient throughout the process.

Results

In reference to the quantitative data, the results of the measurement of blood oxygen saturation (Figure 1) and heart rate (Figure 2) are shown; both measurements were made both before the session and, at the end, during the 18 sessions. As can be seen in Figure 1, the oxygen saturation levels are only one point between before and after the sessions. However, it was observed that with the exception of session number 6, all sessions ended with the value above arrival when they had not yet practiced physical exercise or sung. Figure 2, however, shows a clear decrease in heart rate between before and after the intervention. Mean heart rate data reveal improvement after the intervention: before 91.2, then 79.6.

Figure 1.

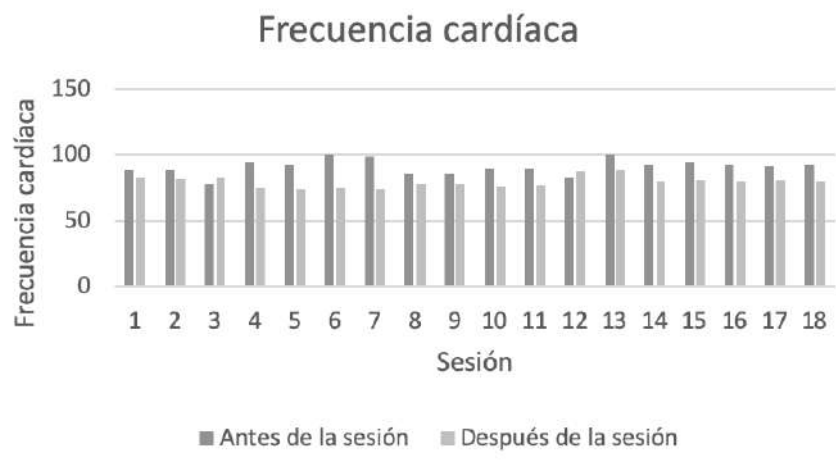
Graph of blood oxygen saturation levels before and after the procedure.



Note: The mean blood oxygen saturation before the intervention was 98.9 and after the intervention 99.4.

Figure 2.

Graph of the heart rate before and after the procedure.



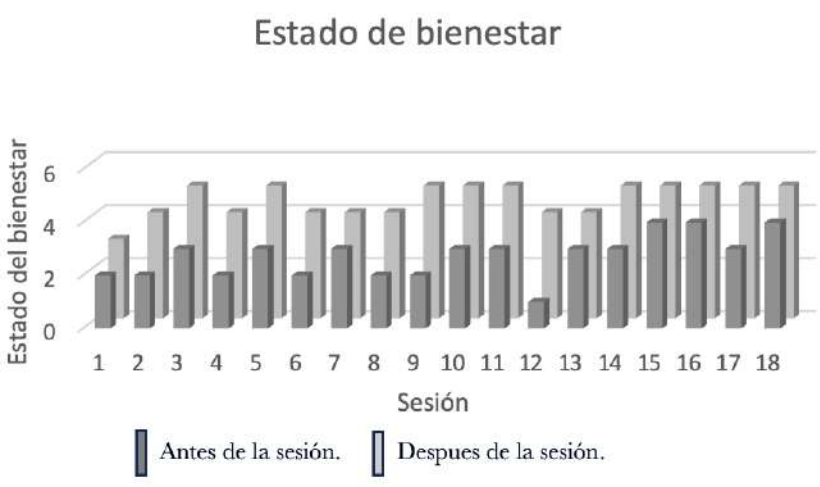
Note: All indices go down after the session.

In relation to the state of well-being, throughout the sessions, the patient was assessed, both at the beginning and at the end, her state of well-being. An improvement was evident after each of the sessions (Figure 3).

Regarding the follow-up sessions, the patient has attended 99% of the sessions, and according to the reflection diary, she attended motivated and eager, even when the pregnancy entered its most advanced stage. At all times, it has been participative and has carried out 100% of the proposed activities. Every day, he verbalized how good the sessions were for him; he left with

Figure 3 .

Graph of the state of well-being before and after the intervention



Note: At the beginning of the process the difference in state is much greater and both values grow at the end of it.

more energy and well-being, and the day he couldn't come, he missed it.

Throughout the sessions, the patient has been showing more and more confidence; at first, she showed a certain shyness that was evident in the activities of body expression, in which fluency was lacking.

During the process, and mostly in the singing activities, the patient expressed comments such as, "The baby has moved," with joy in the gestures and the eyes. In addition, she also let loose throughout the sessions, coming up with themes of songs she liked and verbalizing those things that caused her the most anxiety due to her previous miscarriages.

We can say that, with respect to the objectives set with singing, the patient was able to experience the expression of emotions and the bond with her baby. The patient explained that, at home, when she or the baby felt restless or nervous, she would sing the lullabies and notice how little by little the baby calmed down, and so did she.

In the same vein, with the use of singing in vocalizations with resonances and connection with the belly, she expressed her pleasure and positively valued these exercises since they connected her with the baby, relaxed her, and gave her tools for labor.

In the proposed activities on improvisation and creativity, it was observed that they were the ones that provoked the greatest sense of empowerment in her. In this regard, it was seen that in the first sessions, she did not dare to handle some instruments due to insecurity or fear of not playing well; this fact took an important turn towards the middle of the process when the client took the initiative to choose instruments and experiment with their sounds.

After a visualization that was carried out, the patient was asked to express what she experienced with a drawing; the result was a drawing full of cheerful colors, musical notes, and circular and concentric symbols, similar to a treble clef, which shows how music was becoming an important language for her. In another of the sessions, the patient was asked to write a message to her son; she never hesitated; she was clear about what and how to tell him, and the words were clearly loving.

DISCUSSION

The main objective of this case study was to design and implement an intervention to test the benefits of using music therapy with singing as the main instrument to reduce stress and anxiety in pregnant women from their second trimester of gestation and thus be able to promote bonding with the baby. According to the results of the present study, singing had a positive effect on the reduction of stress, which was evident throughout the interventions, thus fulfilling one of the objectives set.

The differences between the data taken before and after the session, such as heart rate, blood oxygen levels, and state of well-being, are significant, always obtaining more positive values after the singing interventions. Also, the qualitative data provided by the surveys and observation diaries reflected an improvement in the state of well-being of the patient, who sees singing as a useful tool for her and her baby's relaxation.

The work of Federico (2012), as has been tried in this study, gives a lot of importance to the Welcome to the World song for the baby since it has been seen to relieve the perceived stress during the birthing process. Studies by Persico et al. (2017) showed that the mother's singing with lullabies, due to their warmth and leisurely rhythm, has a relaxing effect and contributes to the mother-baby relationship. We can conclude that, in general, research on stress in pregnancy treated with music therapy obtains positive results.

CONCLUSIONS

Through this intervention, the patient has been able to learn about music therapy and the benefits of music first-

hand, having the opportunity to approach music therapeutically. Until joining this studio, I had not experienced direct contact with the world of music, although I did listen to some styles and sometimes sang to the baby.

Being in her second trimester of pregnancy, singing has awakened in her the possibility of communicating with the baby and calming him since she could feel it easily, thus strengthening the emotional bond. In the same way, the work with singing has allowed the patient to work on different breaths and reduce the heart rate, as we have seen in Figure 2, thus fulfilling one of the objectives set. In addition, the breathing exercises proposed in the activities, together with the emission of sounds, gave a complete tool both for relieving stress and for the moment of delivery.

The song-writing was a very useful element, allowing the mother to express in her lyrics emotions of concern but also joy at being able to offer a welcome song to her baby. The work done at home has been beneficial as a tool for stressful situations, as the patient herself verbalized. Finally, a quote from the patient is extracted from the final survey: I loved the sessions; I enjoyed it a lot. I left with a lot of energy and well-being.

The main limitation found in this study is that, as it is a single case, it has not been possible to contrast the results with other patients. It would be interesting to be able to work with a larger sample so that the results have a greater impact. It is considered important that these interventions can be carried out in groups rather than individually in order to create an environment conducive to sharing concerns and exchanging information and for women to feel accompanied.

Finally, after analyzing the data obtained, the hypothesis that music therapy is an effective tool in the treatment of stress and anxiety and promotes mother-baby bonding in women in their second trimester of pregnancy can be validated.

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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

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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 1.

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.						

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.						

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 worked 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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THE ADAPTED GESTURE AS AN ELEMENT OF CREATION MUSICAL IN MUSIC THERAPY

FINANCES:
MUSIC THERAPY IS MORE EFFICIENT IF THE ACCOUNTS ARE CLEARER

FINANZAS: LA MUSICOTERAPIA ES MÁS EFICIENTE SI LAS CUENTAS ESTÁN CLARAS

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INTRODUCTION

If reading the magazine has brought you this far, dear reader, it means that you have entrepreneurial concerns and are committed to comprehensive and sustainable professional development of music therapy. As you can see, we share the same interest.

In this article, we want to reflect on financial and labor issues. These coordinates tend to be left out of the therapeutic focus, greatly distorting the projects' design and hindering professional planning and, thus, their sustainability.

To guide you on these issues, we are going to take up the content of the homonymous presentation offered at the first MUT Talks professional entrepreneurship conference (Fattorini, 2023), which we encourage you to recover at the following link: VIDEO MUT talks.

As music professionals oriented to therapy, it is unavoidable that it is important to propose an entrepreneurship strategy. These issues are hardly addressed in postgraduate courses, as if the practice of music therapy were spontaneous and fortuitous.

To fill this gap, that gap, in terms of research, that fifth talk laid a small foundation that deserves to be expanded today by confirming the original mission of the MUT talks: to help entrepreneurship and ensure the leap that new professionals have to make from the theory of music therapy to professional practice (Gamella-González, 2023).

Pointing out the financial cardinal points and the boundaries of contracting is undoubtedly the best support for those who decide to implement their therapeutic vocation. The solidity of their first projects, apart from clinical protocols and evaluation measures, must be based on a good design of budgets and correct taxation. The reasons are obvious: to achieve fair remuneration and to comply with current legislation. This makes the proposal sustainable over time and gives security to the patient and the therapist.

Our goal, therefore, is to demystify some of these tax procedures and procedures in order to place the entrepreneurship process in a realistic approach, thus avoiding remuneration disappointments and legal risks. Although it is complex to address all the cases, we will only outline the main requirements according to the Spanish legislative framework. We will use some examples and propose some calculations by simulating real assumptions. With all this, we will outline a small manual on financial first aid.

Panorama of Professional Music Therapists in Spain

As a starting point, we will focus on two articles on the situation of professional music therapists in Spain. The first, "Professional and Labor Profile of Spanish Music Therapists: A Descriptive Study" (Mercadal-Brotons & Sabatella, 2014), found the results of a questionnaire on labor development. The 122 surveys collected allowed us to assess the evolution of this profile in the decade between 2004 and 2014.

One of the most outstanding pieces of evidence shows that "There is no high rate of labour insertion, nor a census of active professionals" (Op cit, p.9). This is already very significant. It shows the low level of implementation of music therapy in those years and leads us to question what may be the origin of this limitation.

There are two possible scenarios. One is that in the absence of an up-to-date census, the data may not faithfully represent the social and professional reality that is expected to be known. Two, the professional fabric is really scarce, and therefore, reality is well represented.

Other contributions to the study (Table 1) are worth noting. They will help us understand the work context more clearly in relation to other factors such as the workplace, the type of working day, and the type of contract.

Table 1.

Indications about the current professional situation of music therapists in 2014

Workplace Work	Schedule Type	Contract Type
Private centers: 48%	Full-time: 17%	As a music therapist: 50%
Public institutions: 33%	Part-time: 43%	As teachers: 20%
In other contexts: 19%	Specific projects: 40%	Other categories: 21%

Note: The authors' elaboration is based on the study by Sabatella and Mercadal-Brotons (2014).

Half of the music therapists are employed in the same professional category (50%), which is a good figure. A high percentage are linked to private schools (48%), although a minority work full-time (17%). We will keep this information because perhaps it will help us explain one of the keys to contracting that we will see later.

Analyzing the second study, we note that its focus is on issues related to professional ethics in music therapy, also seen from the perspective of the therapist himself (Fattorini-Vaca & Gamella-González, 2022). We cite it here because professionals in the field were also consulted to learn about the training received in ethics and its application in direct care projects. To analyze these issues, a survey was also carried out on their professional profiles, so both studies come into dialogue with each other, although without replicating each other. In this second case, a distinction was made between active music therapists and those who were not since one of the categories of observation in the article was to know if only active people were aware of professional ethics.

Depending on the topic at hand, it is appropriate to highlight the data referring to inactive music therapists (Table 2). At first glance, it can be seen that it is close to some of the work indexes in private centers but emphasizes the increase in part-time dedication (66.6%). This highlights that although the percentage of full-time contracts has risen, part-time employment has risen much more.

Another percentage that adds to this figure is that of music therapists who, being inactive at the time of the survey, had worked at some point volunteering (57.1%). This data once again highlights the difficulties or delays that occur in accessing a position as a music therapist on a stable and continuous basis.

The study did not have data on the characteristics and types of contracts (dependent labor or self-employment) since this was not its objective, but comparing both publications, with a margin of 7 years between them, does not show a fully positive trend in the sector.

Table 2.

Indications about the current professional situation of the music therapist in 2022

Workplace	Work Schedule Type
Private center: 44,4%.	Full-time: 33,3%
Public center: 22,2%.	Part-time: 66,6%
Other contexts: 33, 4%	-

Note: Authors' elaboration is based on the study by Gamella and Fattorini (2022).

We consider that one of the factors that hinder the capacity for labor entrepreneurship is the lack of financial literacy and the lack of an institutionally recognized professional category. As the second is an achievement that is beyond the scope of this document, we will focus on providing some reflections and tax tips to clarify shadow areas and help those of you who want to practice as music therapists to step with firmness, determination and leadership.

Three use cases

Let us take the case of an entrepreneur. She has decided, after finishing her postgraduate degree in music therapy, that she wants to practice. as a professional in the first context that arises, although he is not entirely clear about which one he would like the most. In her training, she learned clinical methodology, therapeutic and musical skills, research, ethics, project design, etc.

She combined all this theory with a juicy internship period, and in her master's thesis, she planned a well-founded project to intervene with the elderly. In his master's degree, no one told him about the steps to become a professional. The financial issues, how to make budgets, and how to pay taxes were not addressed. Be that as it may, he finishes his studies and considers several possibilities.

In the first case, our graduate enthusiast decided to start with the easiest thing: adapting her music therapy project for the school where she works as a dependent labor teacher. She wants to start small and plans to work at recess with the children who have the most behavioral problems. Its approach is exploratory. He is not yet fully confident in his abilities and is going to measure himself in a controlled environment.

Going back to the study by Mercadal-Brotons and Sabatella, at least 41% of those surveyed when practicing as music therapists were hired as teachers and the like. Of these, 67% work in private institutions (2014). The school employs our teacher, i.e., her job profile is dependent, and in principle, no special change is foreseen as far as her employment relationship is concerned. If the program were successful, it might be part of the after-school plan. In this case, your current contract could be extended.

In a second spin-off, this young woman wants to go further. It's been a while, and you want to bet on your original idea. Therefore, she proposes working with the elderly to promote active aging. She proposed her initial project to a local association close to her residence, and there, she was asked to work as a volunteer. As these are his first independent therapeutic steps, he accepts the proposal.

Law 45/2015, of October 14, on Volunteering

The key aspects of volunteering typically revolve around the following points:

- **A collaboration agreement is signed according to the law for a specific period.**
- **There is no financial compensation.**
- **There may be reimbursement of expenses.**
- **Specific training is provided to participate in volunteering.**
- **Hours of practice can be certified.**

Doing a volunteer program at the beginning of your career is one of the least complex and expensive ways to strengthen your therapeutic skills.

We clarify that volunteering is a collaboration between two parties. Its fundamental condition is making certain services or tasks available to some people without receiving any financial consideration. However, in the exchange between the professional and the institution that supports volunteering, issues such as training and certification of practical work are agreed upon.

In the third scenario, some time has passed since his graduation, and although he has completed several projects in the social field, he has never received compensation for his services. That initial enthusiasm begins to wane. Your dream project is tucked away in a drawer. His main occupation at school takes up all his time.

Thanks to contact with a training colleague, she is offered to work a few hours a week in a neurological rehabilitation center, where she is required to take advantage of the category of professional self-employed worker. This makes her uneasy but particularly motivates her, and she wonders where to start.

The Commitment of the Contract

Let us start with the fact that any professional relationship, such as the provision of therapy services, is subject to a legal, labor and tax framework. When an intervention project is designed, in addition to the justification, the theoretical framework and the methodological framework proposed to achieve therapeutic objectives, what we are acquiring is a commitment to results. That is to say; we are committed to complying with what has been agreed, whether our participation is onerous or free of charge, and like any agreement, it requires the assumption of responsibilities from an ethical, professional and, therefore, legal point of view.

Although music therapy in Spain is not recognized as a therapeutic profession, as other related disciplines are, it does not exempt us from attending to the normative/legal requirements and much less neglecting our patients. They are, in all cases, the ones who should receive the best care regardless of our contractual circumstances. Given that there is this legal vacuum for music therapy, our attention to legal issues must be even more exhaustive in order to avoid any patient being affected by issues peripheral to the treatment itself.

Once the first stages of clinical learning in volunteer contexts have been overcome, the first two scenarios that our music therapist has gone through, it is time for professionalization. We are referring to the day when we decided to become full-fledged music therapists, putting therapeutic resources and skills at the service of society in exchange for financial consideration. This is where real commitments to ourselves, to patients, to society and regulators begin. It marks the beginning of the game of exchange between giving and receiving.

Continuing with the project design, it is necessary to insist on budget items. They should be as well-tuned as the musical instruments we will be using. A project is a balancing act. All the weight cannot be placed on the clinical because our intervention will become unsustainable at an economic level or vice versa.

Poor financial forecasts would cause our main focus to shift from the needs of the patient to the needs of the music therapist in the middle of a process. There is no need to explain what this would entail.

Therefore, the first suggestion is to hire the services of a trusted agency, which can help us properly design our professional profile. When there is economic retribution, it is necessary to comply with taxation depending on the volume of activity that we are going to develop. They are the ones who will best guide us in complying with all the legal requirements.

In the same way, the day we cross the threshold of professionalization, we must start investing in training supplements and proportionally pass on the expense that these entail in our accounts. If we are active as music therapists, we have to attend continuous training and self-experience workshops, we have to carry out a process of personal development and therapy as many times as necessary throughout our career, and we have to hire clinical supervision services to guarantee the quality of our services. These are personal investments that respond to inescapable principles of professional ethics that must be weighed in the fees applied to our therapy services.

Many of the students who finish their degree ask us questions like these:

- Do I have to register with Social Security to start my music therapy workshop?
- What is the heading that I have to register with the Treasury?
- Do I have to pay monthly bills?
- Do my invoices include VAT?
- Do I have to file quarterly personal income tax returns?

Each case, each project, is a different reality and requires specific professional guidance, such as those offered by Hdosol, music, and therapy. In this article, we can only address generic issues. So, let's continue with

the professional step of our music therapist. She will go from doing music therapy occasionally in informal contexts to providing a professional service, gradually occupying all her working hours. This requires designing a strategic plan.

Strategic Plans

The importance of constituting a Strategic Plan is quickly explained with an arboreal example. Let us imagine that we belong to an environmental NGO and that one of its initiatives is to plant trees to reduce our carbon footprint. We plan to start modestly by acting at the local level. We contribute from the beginning by planting a tree in our garden or the public flowerbed in front of our house.

We understand that planting a tree is not about taking any seed, digging a hole, and waiting to see what germinates. This action involves understanding the nature of the tree first, accompanying and encouraging its growth with patience and taking care of its ecosystem. We should take care to know how it will grow up, what its roots will be like or the type of care it needs to avoid generating a problem in the medium and long term. Well, the strategic plan in music therapy is quite similar.

Table 3.

Key Points in a Strategic Plan

General Economic Situation:	Growth, unemployment, interest rates, exchange rates, commodity prices, etc.
Demographic and Labor Environment:	Immigration, aging population, birth rate, women's participation in the labor market, educational level, average leisure time, etc.
Sociocultural Environment:	Growing interest in products and services associated with health, environment, youth, beauty, individualism, networks, new families, etc.
Technological Environment:	New ways of production or selling, e-commerce, opportunities offered by the internet, obsolescence, technological training needs.
Political and Legal Environment:	Political orientation in each institution and its impact on legislation related to activities, urban planning, labor laws, environmental laws, etc.
Customers:	Characteristics, motivations, purchasing habits, location.
Competition:	Characteristics, specialization, location, strengths and weaknesses, market share, entry barriers.

Source: Infoautónomos (2022, 14 July)

A design of these characteristics involves analyzing what I want to offer people, how I want to show myself, what my specialization will be, what elements I can use to highlight my project, how I am going to organize my work, what time frames I set for myself, what is the volume of work I want to achieve, what my therapeutic identity will ultimately be.

"Becoming self-employed is the quickest and simplest way to start a business because it requires fewer administrative tasks and legal procedures, thus reducing the costs of establishment. There is no minimum capital required for its formation. Full control and management of the business are retained. If profits are low, less taxes are paid compared to a commercial company. Overall, managing tax and accounting obligations is simpler." (Andalucía Emprende, Public Foundation of Andalusia, 2021, p.4)

Tables 3 and 4 show other general and social issues that should also be taken into account. It is essential to design a strategy that analyzes the external elements of the professional and those of an internal nature. At the same time, it is necessary to weigh one's personal qualities and competencies and to enumerate the material and material resources technicians that we will need. On the other hand, we need to assess the costs and sources of funding to make our plan sustainable. The goal is to make the tree grow and develop fully.

Although the neurological rehabilitation center project initially involves a few hours of service, the strategic plan should serve as a compass for operating with a long-term perspective. In this way, our decisions will be goal-oriented, and the results, in business terms, will make logical, tangible, and achievable sense.

Table 4.

External Factors in Professional Strategic Planning

Organization:	Task allocation and delegation, decision-making.
Human Resources:	Training, involvement, compensation, recruitment, and stability.
Administration:	Effectiveness and suitability of the method used, compliance with obligations and regulations.
Economic and Financial Situation:	Profitability, liquidity, investment needs, payment and collection terms, relationships with banks, etc.
Marketing	Product demand, pricing level, promotions, etc.
Networks, Contacts, and Alliances:	Profitability of communication and advertising actions. Business image.
Technology:	Importance in my business, risk of obsolescence, new applications for my activity.

Source: Infoautónomos (2022, 14 July)

The Logic of the First Calculations

To play in the first division, you have to enjoy the advantages and assume the obligations. As we have argued, being a professional music therapist in an inappropriate work context entails difficulties and risks. For this reason, perseverance is an important ingredient that we must cultivate, like our tree above.

As it is time to put ideas into practice, we are going to take care of the investments that must be considered in order to be up to date with tax obligations. When starting up an economic activity in Spain, we are obliged to:

- Register with social security as a self-employed professional (reduced rate of €80 in the first year).
- Register with the Tax Agency as a self-employed professional.
- Register (comunicare IIAE) at the local town hall (if it is mandatory, which it is not in all cases).
- Comply with timely tax returns.

We recommend consulting the virtual offices of both the Social Security and the various Tax Agencies of each autonomous community to find out the latest updates and the scope of each heading. We mention only the basic obligations, without exception, but it is important to know all the assumptions and procedures.

With all this data, it is time to quantify the real cost of music therapy services. They must be passed on proportionately to the expenses that these tax obligations entail. In the following Tables 5 and 6, we propose some approximate calculations to determine the dividends that result from a specific activity compared to a more extensive dedication.

We will exclude expenditure on material and instrumental resources, although these are important items that should also be valued in any budget.

With these two assumptions in mind, we are going to compare data and draw the most obvious and practical conclusions to achieve a sustainable balance between income and expenditure that allows us to maintain our strategic professional project over time.

The Clear Accounts of a Budget

The means of financing must be defined in the calculations of a budget. Usually, the only source of income is the fee received, and with it, all expenses must be covered to avoid working at a loss.

In the expenses item of both tables, we have computed the cost of registration with social security, the VAT declaration and civil liability insurance and the management costs to make it easier to process all the documentation. If we were to bear the cost of using the premises where the project is going to be developed and the necessary materials (musical instruments, furniture, stationery, technology, etc.), as well as advertising expenses, we would have to add these amounts. As we said, in this case, we will lea ve them out, although it is convenient to take into account a contingency bag for unforeseen events that may occur.

Table 5.

Estimated calculations in a project with one hour per week in a month (4 sessions).

CONCEPTS	INCOME	-15% IRPF	NET TOTAL	IF VAT (+21%)	NET TOTAL
Salary (music therapist fee) 60€/ hour x 4	240.00	36.00	204.00	50.40	254.40 €
CONCEPTS	**EXPENSES**				
Social Security (flat rate)	80.00	-	-	-	80.00
Professional services (1 supervision per month)	80.00	-	-	16.80	96,80
Rent (room)	-	–	–	-	–
Supplies (instruments, consumables)	-	–	–	-	–
Advertising and propaganda	-	–	–	-	–
Miscellaneous expenses (contingency fund)	50.00	–	–	-	50.00
Liability insurance (€120)	10.00	–	–	2.10	2.10
Accounting services	90.00	–	–	18.90	108.90
				PROJECT COST	**337.80 €**
				BALANCE	**-83,40**

Note: This is a project-based estimate of 1 hour/week, based on a gross amount of €60/h; from this, a net of €83.40/h is derived.

Table 6.

Estimated calculations in a project with four hours per week in a month (16 sessions).

CONCEPTS	INCOME	-15% IRPF	NET TOTAL	IF VAT (+21%)	NET TOTAL
Salary (music therapist fee) 60€/ hour x 4	930.00	139.50	790.50	195.30	985.80 €
CONCEPTS	**EXPENSES**				
Social Security (flat rate)	80.00	-	-	-	80.00
Professional services (1 supervision per month)	80.00	-	-	16.80	96,80
Rent (room)	-	–	–	-	–
Supplies (instruments, consumables)	-	–	–	-	–
Advertising and propaganda	-	–	–	-	–
Miscellaneous expenses (contingency fund)	50.00	–	–	-	50.00
Liability insurance (€120)	10.00	–	–	2.10	2.10
Accounting services	90.00	–	–	18.90	108.90
				PROJECT COST	**337.80 €**
				BALANCE	**648 €**

Note: This is a project-based estimate of 16 hours/week, based on a gross amount of €60/h, from which a net amount of €648/h is derived.

The gross salary established in the two tables is €60/hour. Although this may seem like a high amount, considering the balance of expenses, it is not a high price.

Comparing both final results, we found that economic profitability is only possible if we carry out an average number of sessions higher than those of our music therapist's initial collaboration proposal in the neurological rehabilitation center. In other words, the professional jump is easier and more profitable when we bet everything on the red.

The increase in direct service hours does not increase taxes, which would result in a positive revenue balance. A table shows that we have quadrupled the number of sessions. However, if we only double them with respect to Table 5, the final amount would already be positive. Therefore, we insist that the balance that makes our project sustainable is linked to the time commitment factor. Professional success is closely linked to the level of commitment we adopt.

Obviously, greater dedication also increases the preparation time of the sessions and, by extension, the resources spent on supervision. However, by receiving a higher share of income, we have more room to reinvest in services that increase our quality of care.

Suppose our strategic plan also includes other alliances. In that case, we can opt for subsidies that help finance costs, thus increasing profitability and improving professional conditions and, with it, access to better-continuing education programs, participation in congresses and dedicating part of our work to research and dissemination of results. These tasks are equally relevant and necessary in a framework of professional expansion of music therapy in Spain.

CONCLUSIONS

We are aware that many of you may have thought that if music therapy is not regulated in Spain, it does not make sense to undertake it as a self-employed professional, basically because of the complexity that these processes entail. We have to say that this is a contribution to the group of music therapists.

Our presence is necessary in hospitals, nursing homes, day centers, schools, and all those social environments that other health professionals cannot reach. Our work is only sustainable if it is regulated and protected by professionalized intervention frameworks. This system only involves compliance with labor and tax principles. Therefore, aspiring to professionalization is a commitment, a commitment, a positioning to which we must all respond.

Achieving institutional recognition is something that goes beyond a personal plan, but it undoubtedly contributes to the collective plan. The professionalization of music therapy inexorably involves a common positioning of the entire collective. We are talking about sharing the same educational, therapeutic and legal approaches. The unification of salary tables and tax protocols should be one more objective: to give support and legal certainty to all those who, in the face of the difficulties expressed, are committed to providing therapeutic benefits of music to people.

So, let us look beyond what happens within a session. Let us value what we have invested in training. Let us think about tax obligations, investments in musical instruments and everything that brings quality to our services. Let us assume self-care as an investment, recovery and rest times, supervision and continuous training as an integral and indispensable part of our preparation for work. Moreover, caring for people. To them, we owe the effort and commitment to carry out the good profession of music therapy with guarantees.

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ENLACES DE INTERÉS

SEDE AEAT: https://sede.agenciatributaria.gob.es/

SEDE SEGURIDAD SOCIAL:
https://www.seg-social.es/wps/portal/wss/internet/ Inicio

PUNTO DE ANTENCIÓN AL EMPRENDEDOR:
https://paeelectronico.es/es-es/ Paginas/PagInicio.aspx

FORMAS JURÍDICAS DE NEGOCIO: Información detallada sobre las distintas formas jurídicas para desarrollar tu negocio https://plataformapyme.es/es-es/IdeaDeNegocio/Paginas/FormasJuridicas-Descripcion.aspx?cod=EIN&nombre=Empresario%20Individual&idioma=es-ES

REALIZAR NEGOCIO:

Herramientas digitales para realizar un DAFO o El Plan de Negocio https://plataformapyme.es/es-es/IdeaDeNegocio/Paginas/ IdeaDeNegocio.asp

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THE MUSIC THERAPY CALCULATED SERVES FOR DO NOT SUBTRACT

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