MISOSTENIDO
REVISTA DE MUSICOTERAPIA unir

ENGLISH VERSION

#6,6

MUSIC THERAPY AND PRENATAL SINGING TO REDUCE STRESS DURING PREGNANCY

Isabel Monar Máñez
Music Therapist in Arrels-Espai Terapèutic Educatiu. Valencia (Spain)
https://orcid.org/0009-0007-9194-8823

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.

OPEN ACESS

Recommended Citation
Monar-Máñez, I. (2024). Music therapy and prenatal singing to reduce stress during pregnancy [Musicoterapia y canto prenatal para reducir el estrés durante el embarazo]. *Misostenido*, *4*(6), 52-60. 10.59028/misostenido.2024.16

Correspondence
ismoma6@gmail.com

Received: Jan 7, 2024
Accepted: Feb 21, 2024
Published: Mar 15, 2024

Financing
This proposal does not have any institutional funding.

Competing interest
The author of this proposal declare that she has no conflict of interest.

Author contribution
The author declare that she has developed this proposal and elaborated the academic article.

Ethics approval
All appropriate permits have been signed

DOI
https://doi.org/10.59028/misostenido.2024.16

Editorial design
PhD. David Gamella
International University of La Rioja

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).

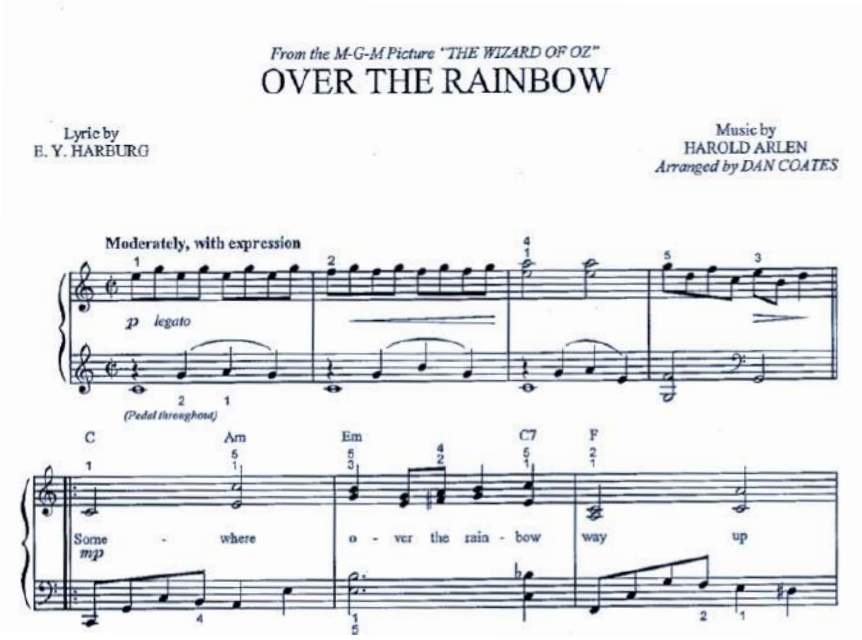
As for receptive activities or listening to music, they have been used for the work of expression and body awareness, breathing, relaxation, and visualization. It is important to note that throughout the 18 sessions, several routines were established that were repeated both at the beginning and the end 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.

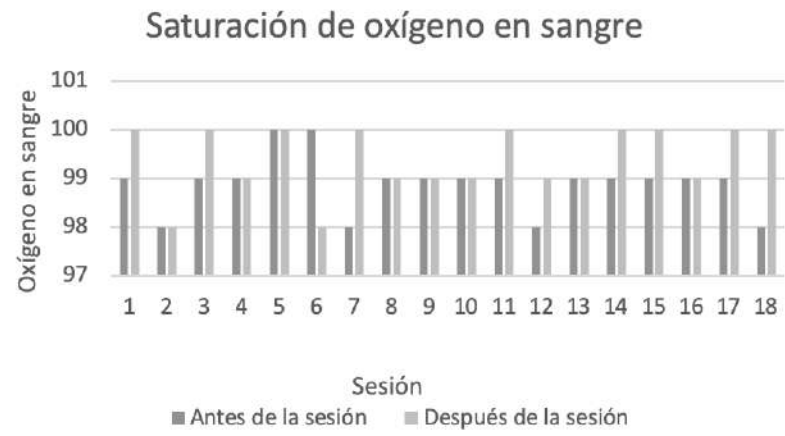
Qualitative data were obtained from reflection diary entries, log sheets, and the open-ended questionnaire survey. In this way, an analysis has been carried out that has allowed us to observe the evolution of the patient throughout the process.

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.

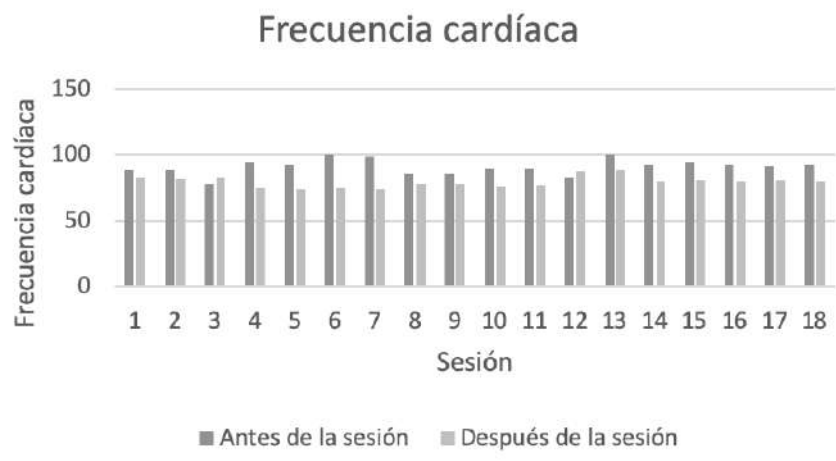
Graph of blood oxygen saturation levels before and after the procedure.



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.



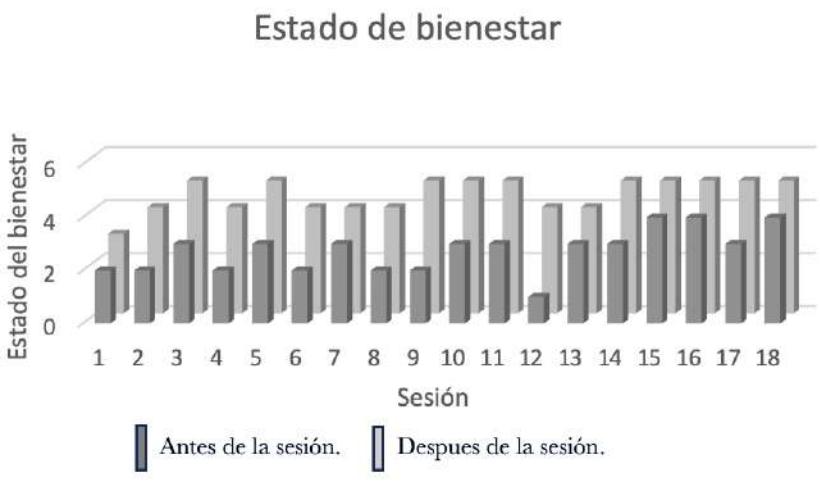
Note: All indices go down after the session.

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.

REFERENCES

Alder, J., Urech, C., Fink, N., Bitzer, J., & Hoesli, I. (2011). Respuesta a la relajación inducida durante el embarazo: comparación de mujeres con niveles altos versus bajos de ansiedad. Revista de psicología clínica en entornos médicos, 18, 13-21. https://doi.org/10.1007/s10880-010-9218z

Arranz Betegón, Á., García Moliner, M., Montenegro Nadal, G., Camacho Sáez, A., Parés Tercero, S., Goberna Tricas, J., & Gratacós Solsona, E. (2017). La influencia del estrés o ansiedad de la gestante en el peso fetal o neonatal: revisión bibliográfica. Matronas Profesión, 18(2), 69-77.

Bertherat, M., Bertherat, T., Brung, P., (1996). Con el consentimiento del cuerpo, diario de una futura madre. Ed. Paidós Barcelona

Calais-Germain, B. (2006) La respiración, anatomía para el movimiento-tomo IV. El gesto respiratorio. Ed. La liebre de marzo Barcelona.

Carrillo-Mora, Paul, García-Franco, Alma, Soto-Lara, María, Rodríguez-Vásquez, Gonzalo, Pérez-Villalobos, Johendi, & Martínez-Torres, Daniela. (2021). Cambios fisiológicos durante el embarazo normal. Revista de la Facultad de Medicina (México) , 64 (1), 39-48. Epub 06 de julio de 2021. https://doi.org/10.22201/fm.24484865e.2021.64.1.07

Cedeño, A. (2021). Guía de actividades prácticas para la estimulación prenatal por medio de la música, el sonido y el canto a partir del segundo trimestre de gestación. https://repository.bellasartes.edu.co/handle/123456789/109

Doco, N. (2017). Respira [canción]. En El buen Gualicho. Casa Del Árbol

Federico, F. G. (2012). Viaje musical por el embarazo. Ed. Kier.

Freijomil Reverter, A. (2016). Arteterapia y musicoterapia en la etapa prenatal, paternidad, maternidad y postparto. Recursos creativos para profesionales que las acompañan. Arteterapia. Papeles de arteterapia y educación artística para la inclusión social, 11, 163-183. https://doi.org/10.5209/ARTE.54123

Gilboa, A. (2014). La naturaleza dual del útero y sus implicaciones para la musicoterapia. Nordic Journal of Music Therapy, 23(3), 242-262. DOI: 10.1080/08098131.2013.809784

Gómez-Sánchez, L., García-Banda, G., Servera, M., Verd., S, Filgueira, A., & Cardo, E. (2020). Beneficios del mindfulness en mujeres embarazadas. Medicina (Buenos Aires), 80(Supl. 2), 47-52. http://www.scielo.org.ar/scielo.php?script=sci_arttext&pid=S0025-76802020000200011&lng=es&tlng=es

Ibarrola, B. (2012). Música para antes de nacer. Ed. SM.

Kamakawiwo´ole, I. (1993). Somewhere over the rainbow [canción]. En Facing Future. Company Hawwaii.

Lobel, M., Cannella, D. L., Graham, J. E., DeVincent, C., Schneider, J., & Meyer, B. A. (2008). Pregnancy-specific stress, prenatal health behaviors, and birth outcomes. Health psychology: official journal of the Division of Health Psychology, American Psychological Association, 27(5), 604–615. https://doi.org/10.1037/a0013242

Loewy J. (2015). NICU music therapy: song of kin as critical lullaby in research and practice. Annals of the New York Academy of Sciences, 1337, 178–185. https://doi.org/10.1111/nyas.12648

Mateos Hernandez. L.A. (2004) Actividades musicales para atender a la diversidad. Madrid: ICCE.

Mateos Hernadez, L.A. (2011). Terapias artístico-creativas. Amaru ediciones, Salamanca.

Miranda, M. C., Hazard, S.O., y Miranda, P. V. (2017). La música como una herramienta terapéutica en medicina. Revista chilena de neuro-psiquiatría, 55(4), 266-277. https://dx.doi.org/10.4067/s0717-92272017000400266

Navarrete, L. E., Lara-Cantú, M. A., Navarro, C., Gómez, M. E., & Morales, F. (2012). Factores psicosociales que predicen síntomas de ansiedad posnatal y su relación con los síntomas depresivos en el posparto. Revista de Investigación clínica, 64(6. II), 625-633.

Oiberman, A. (2005). Historia de las madres en occidente: repensar la maternidad. Psicodebate. Psicologia, Cultura y Sociedad, 5, 115-130

Pérsico, G., Antolini, L., Vergani, P., Costantini, W., Nardi, M. T., & Bellotti, L. (2017). Maternal singing of lullabies during pregnancy and after birth: Effects on mother-infant bonding and on newborns' behaviour. Concurrent Cohort Study. Women and birth. Journal of the Australian College of Midwives, 30(4), e214–e220. 10.1016/j.wombi.2017.01.007

Premal, D. (2002). Om Namo Bhagavate [canción]. En Embrace. Prabhu. Music.

Prieto Sánchez, C. (2023). El parto es sexo y el sexo es parto. Revista El salto, (70), 16-22. Madrid.

Romero González, B. (2020). Estrés perinatal desde la concepción hasta el año de vida. [Tesis Doctoral, Universidad de Granada]. Digibug. http://hdl.handle.net/10481/60123

Romero-González, B., Puertas-González, J. A., Mariño-Narváez, C., & Peralta-Ramírez, M.I. (2021). Variables del confinamiento por COVID-19 predictoras de sintomatología ansiosa y depresiva en mujeres embarazadas. Medicina Clínica, 156 (4), 172-176. DOI: 10.1016/j.medcle.2020.10.010

Salgado-Vasco, A. F., & Rodríguez- Barreto, A. M. (2022). Experiencia de musicoterapia comunitaria en mujeres con un embarazo en conflicto en tiempos de Covid. ECOS - Revista Científica de Musicoterapia y Disciplinas Afines, Especial, 022. https://doi.org/10.24215/27186199e022

Siebert, B. (2006). Wichi Tai [canción]. En Der Pfad Der Kraft-Ein Medizinrad. Araucaria Music.

Teckenberg-Jansson, P., Turunen, S., Pölkki, T., Lauri-Haikala, M., Lipsanen, J., Henelius, A., Aitokallio-Tallberg, A., Pakarinen, S., Leinikka, M., & Huotilainen, M. (2019). Efectos de la musicoterapia en vivo sobre la variabilidad del ritmo cardíaco y estrés y ansiedad autoinformados entre mujeres embarazadas hospitalizadas: un ensayo controlado aleatorio, Nordic Journal of Musi Therapy, 28(1), 7-26. DOI: 10.1080/08098131.2018.1546223

Wulff, V., Hepp, P., Wolf, O.T., Fehm, T, & Schaal, N. K. (2021). La influencia del canto materno en el bienestar, la depresión posparto y el vínculo: un ensayo controlado y aleatorizado. BMC. Pregnancy and Chilbirth, 21, 1-15. https://doi.org/10.1186/s12884-021-03933-z

Welch, G. (2019. Los beneficios de cantar. Sing up.org. https://www.singup.org/blog/article/1390-the-benefits-of-singing.

THE MATERNAL VOICE LEND MELODY TO THE LIFE THAT STARTS