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Review

Use of Music Therapy in Prenatal and Postnatal Period

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Abstract

Pregnancy is a period characterized by physical, hormonal and emotional changes. With conception, profound physiological changes occur in many organs and systems of the mother during pregnancy. These changes are not only physiological but also psychological. Pregnant women are particularly affected by stress during pregnancy, labor and postpartum. At the same time, expectant mothers may experience indecision, frequent mood swings from exhaustion to euphoria, and many psychological disorders such as emotional disturbances or mixed anxiety-depressive disorder. Music therapy, which is a form of treatment aiming at the physical, mental and psychological integration of the patient, is one of the methods used as support during pregnancy. Music therapy is known to have positive effects on the mood and well-being of the mother, with positive effects such as reducing anxiety in pregnant women, improving birth quality and supporting maternal-fetal bonding. It has also been shown to have specific positive effects in the postnatal period, such as reducing pain and anxiety and increasing satisfaction, as well as being beneficial in emotional, intellectual, psychological, physiological and social domains. The aim of this review is to examine the use of music therapy in the prenatal and postnatal period in line with the literature.

Key Words: *Birth, Music therapy, Postpartum period, Pregnancy*

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Introduction

Music Therapy

Music has been a constant part of human life since prehistoric times. Music, which is a powerful tool for expressing emotions, is used for relaxation and healing as well as expressing love, compassion, fear and belief in people's daily lives (1). In addition, music therapy is defined as a specialty that uses music and musical activities to meet the physical, psychological, social and mental needs of individuals. Music therapy is an easy-to-implement, low-cost, beneficial and non-pharmacologic intervention (2).

Music therapy aims to improve patients' potential or abilities in a culturally acceptable manner in an effort to provide better interpersonal relationships and consequently improved quality of life through prevention, rehabilitation and treatment (3). The World Federation of Music Therapy defines music therapy as the use of music and/or musical elements (sound, rhythm, melodies or harmonies) to facilitate and improve communication, relationships, learning, movement, expression, organization, physical, emotional, mental, social and cognitive needs, and therapeutic goals (4). Music blocks nerve conduction pathways by causing the pituitary gland to release endorphins, decreases pain perception and reduces muscle tension, enhancing the effect of body relaxation and self-healing. As a low-cost, non-invasive and drug-free treatment method, music balances emotions, regulates breathing, heart rate and blood oxygen levels, and lowers blood pressure (5). Music therapy is currently used in many areas of medicine, including dental treatments, cardiac surgeries, medical and surgical procedures, obstetrics and oncology treatments, stress reduction, pain management and reduction of hypertension (6).

In Turkey, Music Therapy Certified Training Program is designated as a certified training area within the scope of the Ministry of Health Certified Training Regulation, which entered into force after being published in the Official Gazette dated 04 February 2014. The Music Therapy Certified Training Program Standard of the Ministry's Authority was revised with the Approval of the Authority dated 19.04.2024 and numbered E-99910406-799-241711826. Health professionals and music professionals can participate in the training (7). Since no drugs or substances are used, music therapy does not pose a significant risk to health. However, caution should be exercised if it is to be used in individuals with hearing difficulties, significant mental-mental disorders or substance addiction. If the

therapist fails to establish a trusting relationship, there may be problems such as discontent, discomfort or fear. In this case, the music therapist should be more careful and cooperate with the attending physician. A competent and experienced therapist should organize the therapy in a personalized manner by taking the necessary precautions to prevent undesirable situations (8). In a study conducted by Yang and colleagues in China, thirty minutes of music therapy was applied to women in the experimental group for three days. At the end of the application, it was determined that anxiety levels in the women decreased (9).

Effects of Music Therapy in Pregnancy

Pregnancy is an event that has an important and long-term effect on the life of the expectant mother. Many women experience various stress periods due to physiological and psychological changes during pregnancy (10). Music therapy is the systematic use of music to promote relaxation and reduce psychophysiologic stress (11). Music therapy, which is an effective and natural method to reduce the stress of pregnancy, offers a possible approach in this sense (12).

Studies showing that music therapy is an effective intervention to reduce stress during pregnancy are included in the literature (12-14). In the study by Corbijn et al. it was observed that music therapy reduced anxiety in women with low- or high-risk pregnancies. Thus, it is recommended to use music therapy as an alternative treatment for pregnant women with anxiety (13). Chang et al. reported that listening to relaxing music during pregnancy decreased anxiety and depression symptoms and decreased cortisol levels (12). In a study conducted by Dayyana et al. to investigate the effectiveness of music therapy on anxiety levels and β-endorphin levels in primigravidas in the third stage of pregnancy, it was found that music therapy was effective in reducing anxiety levels and increasing β-endorphin levels. Music therapy can be used as an alternative treatment in this group (14).

The ears are the most developed organs of the fetus at approximately the fifth month of gestation. The brain can process sounds and the fetus can physically react to sound in utero, as high frequencies pass more easily through the amniotic fluid (15). When pregnant women are stressed and anxious, the adrenal glands in their body release adrenaline and catecholamines in response. These hormones pass through the placental barrier and pass to the fetus, creating a physiologic state related to maternal stress or anxiety (16). In a study by Liu et al. İn which 121 Taiwanese pregnant women with

poor sleep quality were selected as the intervention group and the control group, they reported that two weeks of active music listening in pregnant women reduced stress and anxiety and improved sleep quality (17). Arya et al. examined the effect of listening to music during pregnancy on the behavior of the newborn. In the study, it was observed that maternal exposure to music positively affected the nervous system and behavior of the newborn through the endocrine system of women in the intervention group compared to those in the control group (18).

The Effects of Music Therapy on ChildBirth

Childbirth is an important experience in a woman's life and this experience has short and long-term effects. Negative birth experiences have been shown to negatively affect postpartum psychiatric symptoms, sexual functioning, expectations for future births and the connection between mother and baby (19). When a woman encounters the unknown process of labor for the first time, she often feels anxiety because coping with labor pain is commonly seen as a feared moment (20). Pain and discomfort associated with birth can be both physically debilitating and increase anxiety; therefore, it is of clinical importance to reduce both pain and anxiety in women in the period leading up to and during labor (21). Music-based interventions are non-pharmacologic pain relief methods that have received increasing attention in recent years. Music is omnipresent, emotional and seen in every culture. The history of music and its therapeutic role in the medical field dates back to 4000 BC. Various music-based therapies, strategies and methods can be useful for promoting health and well-being. Music can positively affect the physiology of mothers during labor by activating the primary auditory cortex (22). In a study conducted by Sürücü et al. (2018) to determine the effect of music on pain and anxiety during labor in primiparous women, women were made to listen to music in Acemasiran mode, one of the modes used in Classical Turkish music, and it was determined that women in the intervention group felt less pain and their anxiety levels decreased compared to the control group after listening to music (11). Estrella et al. (2023) conducted a randomized controlled study with 343 pregnant women to evaluate the effects of music therapy on anxiety levels, maternal and fetal physiological parameters, labor and birth outcomes; they determined that listening to music for 20 minutes each time during NST in the third trimester and during the first stage of labor reduced anxiety and improved the labor process in primiparous women (23). Therefore, music therapy has been accepted as a safe, inexpensive and effective non-

pharmacological anxiolytic agent due to its effect on anxiety and pain perception and reducing regular pharmacological sedative doses (24).

Effects of Music Therapy in the Postpartum Period

Music therapy is a new and promising innovation in the field of neonatal care, where continuous efforts are being made to reduce both infant stress and parental anxiety levels (25). In addition to well-known early interventions such as kangaroo care, family-centered care, cognitive behavioral therapy, and peer support programs, music therapy is increasingly being implemented. Music therapy can be defined as "the clinical and evidence-based use of music interventions to achieve individual goals within a therapeutic relationship by a qualified professional who has completed an approved music therapy program" (26). Music helps to reduce pain response behaviors of newborns, stabilize vital signs, improve attachment and shorten the duration of hospital stay (27). Since postpartum anxiety in mothers is associated with long-term negative outcomes for both mother and baby, music therapy needs to be integrated as part of standard care for very preterm infants and their mothers (28). In a randomized controlled study conducted in the Netherlands to investigate whether music therapy applied to the baby to identify anxiety in mothers of babies born before 30 weeks of gestation alleviated maternal anxiety, it was found that music therapy was effective in reducing maternal anxiety (28). In a study by Küçükkaya et al. (2022), in which they examined the effect of music played to new mothers on postpartum sadness, Turkish music pieces played with Ney in Uşşak makam for 30 minutes every day for two days after delivery were played to the mothers. Accordingly, it was found that music played to mothers effectively reduced postpartum sadness (29). Bieleninik et al. (2016) found that although music therapy did not have significant effects on infant heart rate, oxygen saturation and behavioral status, it had positive effects on infant respiratory rate and maternal anxiety (30). Standley et al. (2012) suggested that music therapy had significant benefits on heart rate, behavioral status, sucking or feeding ability and oxygen saturation (31). Farhat et al. used headphones to play lullaby music (65-75 dB) for 20 minutes to premature infants for eight days. The control group wore headphones without music. While no change was observed in the heart rate of the babies in the experimental group, they reported significant increases in respiratory rates during the intervention compared to baseline (32). In a study conducted by Almeida et al. to evaluate the effect of music intervention on brain structure

maturation of premature infants, they stated that music therapy had a structural maturation effect on the auditory and emotional functions of preterm infants during an important period of brain development (33). Hâkimi et al. (2021) found that music therapy can significantly reduce both postpartum anxiety and pain scores (34).

Use of Music Therapy and Midwifery Care

Birth is one of the most important events in a woman's life. The course of labor depends not only on the woman giving birth but also on the midwife who assists in labor. The duties of the midwife include primarily medical duties, but also establishing an appropriate relationship with the woman in labor and supporting her (35). The midwife should inform the patient about the course of labor, suggest ways of coping with pain and support the patient in active participation in labor. It is very important for midwives to continuously update their professional knowledge and to use the new skills they have acquired in practice. Therefore, it is recommended that midwives should continuously educate themselves and update their knowledge about the latest developments (36). Vertical positions are increasingly used to alleviate labor pain, and aromatherapy, music therapy, massage and hot compresses are also used. These methods not only reduce the sensation of pain, but also affect the duration of the first and second stages of labor, help the mother to focus, and may reduce injuries to the perineum during natural labor (37). The midwife should have knowledge about the physiology of labor pain, its difference from other types of pain, methods of coping with pain and the mechanisms of action of these methods. Midwives who have adequate knowledge and skills and are aware of their responsibilities can be effective and successful in reducing perceived pain by using non-pharmacologic pain management methods (38).

Conclusion

Results based on the literature suggest that music therapy reduces stress, depression and anxiety during pregnancy, has an impact on pain perception during labor and can function as a safe, inexpensive and effective non-pharmacological intervention by reducing regular doses of pharmacological sedatives. It has been reported that music reduces stress levels in infants, helps strengthen the bond between mother and baby, and produces positive physiological and behavioral changes. Music reduces stress and anxiety in pregnant women and has positive effects on the physiological status of infants. It is strongly recommended that healthcare professionals participate in music therapy

certification programs and incorporate music therapy into their practice.

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