



Research report

Effect of music therapy during vaginal delivery on postpartum pain relief and mental health



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ABSTRACT

Background: Childbirth is an important experience in a woman's life, and unfavorable birth experiences have been shown to negatively impact postpartum maternal health. Aim of this study was to evaluate the effects of music therapy on postpartum pain, anxiety level, satisfaction and early postpartum depression rate.

Methods: Totally 161 primiparous women were recruited and randomized either music group ($n=80$) or a control group ($n=81$). Women in the music group listened to self-selected music during labor. Postpartum pain intensity, anxiety level and satisfaction rate were measured using the visual analog scale (VAS), postpartum depression rate was assessed with Edinburg Postpartum Depression Scale (EPDS) at postpartum day one and day eight.

Results: Mothers in the music therapy group had a lower level of postpartum pain and anxiety than the control group and it was statistically significant at all time intervals (1, 4, 8, 16 and 24 h, $p < 0.001$). A significant difference was observed between the two groups in terms of satisfaction rate ($p < 0.001$) and postpartum depression rate at postpartum day one and day eight ($p < 0.05$).

Limitations: We only measured the effect of music therapy on early postpartum depression rate. Effect of music on late postpartum depression rate should be investigated in future.

Conclusions: Using music therapy during labor decreased postpartum anxiety and pain, increased the satisfaction with childbirth and reduced early postpartum depression rate. Music therapy can be clinically recommended as an alternative, safe, easy and enjoyable nonpharmacological method for postpartum well-being.

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1. Introduction

Women are more exposed to psychiatric illness during the postnatal period. The rate of psychiatric admission is increased postnatally, mostly because of the raised risk of psychosis and depressive illnesses in the first three month after labor (Kendell et al., 1976). Many women experience considerable stress when confronted with the physiological and psychological changes which occur during pregnancy and childbirth (Matas, 1997; Turner et al., 2004). Childbirth is an important experience in a woman's life, and the grade of this experience has short and long terms effects. Unfavorable birth experiences have been shown to negatively impact postpartum psychiatric symptoms, sexual

functioning, expectations about future births and connection between mother and infant (Goodman et al., 2004). Women experience increasing pain and anxiety during childbirth as labour progresses especially for primiparas which can negatively affect both mothers and neonates. Unrelieved severe labor pain may have a detrimental effect on both the mother and the infant (Phumdoung and Good, 2003).

Boudou et al. (2007) investigated the association between the intensity of childbirth pain and the intensity of postpartum blues. They showed that intensity of the childbirth pain is associated with mood disorders in the immediate postpartum. Several explanations they suggested: First, maternity blues could be a reaction to stress caused by childbirth pain. Furthermore, pain can be felt as a failure for women who prepared themselves for a painless labor. Actually, the prepared childbirth training pretends to give women the ability to overcome pain through physical and mental training. Thus, because their responsibility in coping with the labor is heavy and might make them feel guilty if they fail, pain may be at the origin of a

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great disappointment. They concluded that a strong association was found between the intensity of labor pain and mood disorders in early postpartum period. Additionally, the intensity of postpartum blues is the best predictor of postnatal depression. Labor pain could result in the loss of emotional control leading to mood disorders (Phumdoung and Good, 2003). In this point we hypothesized that if pain-related labor can be decreased, postpartum depression can be decreased, too.

Music therapy has been accepted as a safe, cheap and effective non-pharmacological anxiolytic agent due to its effect on the perception of anxiety and pain, reducing the regular pharmacological sedative doses (Ovayolu et al., 2006). Music therapy has also been shown to improve physical signs, decrease stress hormone and stabilise vital signs (Hoffman, 1997; Liu et al., 2010). Additionally, previous studies have found music therapy to be effective in decreasing pain, anxiety and analgesic consumption related to postoperative, procedural, chronic and cancer pain (Sen et al., 2010; Lopez-Cepero Andrada et al., 2004; Menegazzi et al., 1991; Zimmerman et al., 1989; Siedliecki and Good, 2006).

Chang et al. (2008) examined the effects of music therapy on stress, anxiety and depression in 236 pregnant Taiwanese women. The music therapy group received two weeks of relaxing music (four types) intervention. The control group received only general prenatal care. Participants in the experimental group were given the prerecorded CD and asked to listen to at least one disc (30 min) a day for two weeks at any time during the day. They showed that two weeks of music therapy during pregnancy provides quantifiable psychological benefits. If music therapy reduces antenatal depression rate, it may reduce postnatal depression, too. The effect of music therapy on postpartum pain, anxiety, depression, and satisfaction during vaginal delivery has not yet been investigated.

In the present study, we aimed to evaluate the effects of music therapy during vaginal delivery on postpartum anxiety, pain, satisfaction with childbirth and postpartum depression rate in primiparous women.

The following hypotheses were tested in the postpartum period:

1. Patients in the music group will have significantly less postpartum pain than those in the control group.
2. Patients in the music group will have significantly less anxiety than those in the control group.
3. Patients in the music group will have significantly high satisfaction level with the childbirth experience than those in the control group.
4. Patients in the music group will have significantly less postpartum depression than those in the control group both in postpartum day one and day eighty.

2. Methods

2.1. Study population

This randomised controlled trial was conducted between September 2011 and September 2012. Overall, 161 primiparous women who are at 36 weeks of gestational age, coming to Obstetry and Gynecology Department for their antenatal care, were asked to participate in a trial which investigates the effect of music therapy on postpartum maternal health. The study was approved by the Turgut Ozal University Human Ethical Committee and complied with the Helsinki Declaration including current revisions and Good Clinical Practice guidelines. Eligible patients were informed about

the study protocol and signed informed consent was obtained from all patients before the randomisation.

Inclusion criteria were women between 18 and 35 years, primiparous with a 37–41 weeks of gestation and were singleton pregnant with babies of cephalic presentation and normal birth-weight, expected to have normal spontaneous delivery. Women who had any of the followings were excluded; maternal hypertensive disorders, diabetes mellitus, evidence of intrauterine growth restriction, postdates, premature rupture of membranes for longer than 20 h, multiple pregnancies, desired cesarian, receiving analgesic or antipsychotic medications, mothers with hearing difficulties, chronic pain problems, severe dysmenorrhea, inability to understand visual analog scale or EPDS, fetal death in utero, known fetal anomaly. Data for age, height, weight, gestational week, educational level, occupation, family class were recorded on a data sheet.

2.2. Randomization

Randomization was completed using a computerized minimization program to assign participant women to either music group or control group by our clinical secretary at 36 weeks of gestation. Randomisation was stratified according to maternal age, gestational week, education and family class. In this way, external variables were controlled and minimized of group differences.

Calculation of the required sample size was performed with respect to postpartum depression rate. According to the literature, a standard deviation of EPDS 3.7 was expected, and the analysis was carried out with respect to detecting a difference of at least 1.5 (40%) for this parameter. With a power of 90% and α level of 0.05, a sample size for each group of at least 64 patients was calculated as being appropriate. Sixteen patients (25% of calculated sample size) were also added to each group to replace possible missing data for all potential causes.

2.3. Procedures

The primary researcher gave participants in the music therapy group detailed descriptions of the music therapy protocol. Participants were recommended to choose one of the following types of music; soft, relaxing, regular rhythmic patterns and no extreme changes in dynamics which was used and recommended in the literature for anxiety-reducing. In order not to affect the results, participants were not informed that this kind of music therapy was used for anxiety-reducing. Six types of music were used as a result of the participants desired; including classical music, light music, popular music, Turkish art music, Turkish folk music and Turkish sufi music. To take into consideration the wide variety of music-listening habits, women were allowed to choose whether or not to use headphones. The tempo of the music was selected to mimic the human heart rate (60–80 beats/min).

Anxiety and pain was recorded at 1, 4, 8, 16, 24 h in the postpartum period. Satisfaction with childbirth was recorded also at 2–12, and 24 h of the postpartum period. Procedure started after 2 cm cervical dilatation. Data were collected within 0–24 h after the delivery and postpartum day eight. During the labor, the melodies previously selected by the pregnant women were played all the time with a 20-min break for every two hours of music and music was continued to the end of the third stage. All the participants in the music group were asked to bring their favorite tape recorder cassette or CD to the hospital on the day of labor. A suitable substitution was provided for those patients in the music group who forgot to bring a CD or cassette. The nurse placed the cassette or CD in the player according to the procedure.

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