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Effect of Turkish classical music on prenatal anxiety and satisfaction: A randomized controlled trial in pregnant women with pre-eclampsia

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ABSTRACT

Objectives: The present study aimed to evaluate the effect of music therapy on anxiety and satisfaction in pregnant women with preeclampsia.
Design, setting and subjects: A randomized controlled trial was performed on 70 pregnant women with pre-eclampsia hospitalized in the research and application hospital of Kahramanmaras Sütcü İmam University between December 2012 and February 2014. The subjects were allocated to experimental or control groups in a random manner (n = 35 each).
Interventions: Pregnant women in the experimental group were subject to a 30 min Turkish classical music therapy trial each day for a period of 7 days (5 days before and 2 days after labor) whereas those in the control group received routine care and also were assigned to 30 min of bed rest a day. The Personal Information Form, State-Trait Anxiety Inventory, and Newcastle Satisfaction with Nursing Scale were administered to participants. Data were analyzed using descriptive statistics, student *t*-test, and Mann-Whitney *U* test where appropriate.
Main outcome measures: Outcome measures were anxiety scale scores, satisfaction scale scores, vital signs, fetal movement and fetal heart rate.
Results: The differences between anxiety scores were not statistically significant ($p > 0.05$). On the other hand, Newcastle Satisfaction with Nursing Scale scores of the experiment group were higher than the control group ($p < 0.01$). Finally, when considering fetal movement counts, a significant increase was determined in the experiment group, whereas Music Therapy had a minimalizing effect on fetal heart rate and a lowering effect on blood pressure ($p < 0.05$).
Conclusion: It may be suggested that nurses and midwives can utilize music therapy in the care and follow-up of pregnant women with preeclampsia in obstetrics units.

1. Introduction

Music therapy is a type of treatment performed with a structured method by arranging the physiological and psychological effect of musical sounds and melodies.[1] Scientific studies proved years ago that music affects spiritual and mental well-being, and the body, positively.[2,3] Music therapy is thus one of the methods that is as old as the history of medicine itself. There are many studies showing that music therapy is beneficial to the anxiety experienced by the ill and pregnant.[4–8] Specifically, a type of music called Medical Resonance Therapy (MRT) is known to have various beneficial effects in high risk pregnancies and to reduce stress.[9] In this context, music therapy, which is a cognitive behavioral therapy type with high effect on anxiety, can be used as a complementary and alternative treatment method.[10]

Pre-eclampsia, which is categorized as hypertension (≥140/90 mmHg) caused by pregnancy and can be seen alongside proteinuria after the 20th week of pregnancy classically,[11] causes fear and anxiety in pregnant individuals regarding themselves or their babies, and presents as anxiety during pregnancy.[12,13] In addition to a subjective feeling of expectation and anxiety characterized by horror, worrying, or the feeling that a disaster is closing in,[14] pre-eclampsia, if not treated throughout pregnancy, may cause negative outcomes such as babies with low birth weights (SGA), variational APGAR scores, fetal hemodynamics, movement disorders, increase in the risk of pre-eclampsia, early membrane rupturing, or caesarean sections.[15]

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Pre-eclampsia and eclampsia, also known as toxemia, present as a pregnancy complication in 2.8% of pregnancies in developing countries and 0.4% of pregnancies in developed countries. According to the World Health Organization 2005 report (WHO), 12% of all direct mother deaths are caused by eclampsia and this cause comes third among the reasons for such deaths.[16] In addition to this report, in a report published in 2010, 18% of direct mother deaths were stated to be caused by hypertension and the cause was stated to be ranked second among causes for such deaths.[17] In Turkey, 18.4% of mother deaths are caused by oedema, proteinuria, and hypertensive disorders, and 13.7% are caused by eclampsia, with eclampsia coming second among reasons for such deaths.[18]

Music therapy is used today in many fields of medicine, especially in reducing anxiety caused by dental treatments, cardiac procedures, medical and surgical procedures, obstetrics, and oncology treatments, reducing stress, pain management, and reducing hypertension.[5–7,19–24]

On the other hand, the use of music therapy on pregnant individuals is limited and studies on high risk pregnant women are especially insufficient. In literature, music therapy was found to be used on normal physiological pregnancies, in pregnancies where transvaginal ultrasonography was performed, in pregnant woman at delivery, and in pregnant women to whom the Non Stress Test (NST) was applied in the reduction of anxiety.[4,8,25,26] Although among high risk pregnancies, studies on using the method on high risk pregnant women who were suggested bed rest and pregnant women with hypertension were present [7,9] no studies on pregnant women with pre-eclampsia were found.

In literature, there are no studies investigating the effect of Classical Turkish Music presented before and after birth to pregnant women with pre-eclampsia on anxiety, physiological parameters, well-being of the fetus, and satisfaction. There are a limited number of research studies in our country regarding music therapy in the field of obstetrics,[4,8] and no clinical or experimental studies on the effect of music therapy on satisfaction and anxiety of pregnant women with pre-eclampsia were found in the literature. From this aspect, the current study is original.

It was thought that Classical Turkish Music would have a positive effect on pregnant women with pre-eclampsia.[2–9,24–26] For this reason, the aim of this study is to investigate whether music therapy performed with classical Turkish music would have positive effects on the anxiety and physical symptoms of the mothers and the fetuses, as well as investigating the general satisfaction of the pregnant women with music therapy.

2. Methods

2.1. Study design

This was a parallel group, randomized controlled trial (RCT). The study was conducted with pregnant women who were present at the maternity unit of Kahramanmaras Sutcu Imam University Research and Application Hospital and were diagnosed with pre-eclampsia.

The hospital where the study was conducted was the only public hospital which offers third step medical services in the city, and all of the complicated cases such as pre-eclampsia were being forwarded to this hospital. In the 12 bed Obstetrics Service, three separate rooms for women with pre-eclampsia were present, and these rooms were designed for three people or a single person.

2.2. Permissions for the study

Official permissions from Kahramanmaras Sutcu Imam University Medical School Research and Application Hospital Chief Physician's Office and Obstetrics Department through Kahramanmaras Sutcu Imam University Rector's Office and written permission from the Marmara University Ethical Board were taken (Institution permission: 26.11.2012-9660; Ethic Board Permission: 14.09.212-1). Additionally, before the study, all of the participants were informed about the study and an informed consent form was given to each participant (Informed Consent Form). All participants completed a consent form before the study.

2.3. Participants

The criteria of The American Congress of Obstetricians and Gynecologists and the National High Blood Pressure Education Program (NHBPEP) [11,27] were used in the study, and according to the criteria, 126 hospitalized pregnant women who stayed at the hospital between the dates of December 1st 2012 and February 1st 2014 with a diagnosis of pre-eclampsia formed the population of the study. Before sample selection, the whole population was planned to be included in the study, however, only 84 women met the inclusion criteria.

Inclusion criteria were:

(1) Being an inpatient for at least five days with a diagnosis of pre-eclampsia,
(2) Being in the 30th week of pregnancy or above (Because Non Stress Test would be taken during observation and the music would continue until birth and after birth);

In this study, in order to measure the Fetal Health and reaction of the fetus on music, we used the Electronic Fetal Monitoring and measured the fetal heart rate and fetal movements before and after music by non-stress test (NST). NSTs are generally performed after 28 weeks of gestation. Before 28 weeks, the fetus is not developed enough to respond to the test protocol. Additionally, pre-eclampsia usually depends on at third trimester in the pregnancy. In addition, at third trimester of the pregnancy fetus can hear the extrauterine voices and music and reflect the music more than second trimester. Due to these reasons, the pre-tests were given in the 30th week of pregnancy or above.

(3) Being at or above 18 years of age (for detailed Informed Consent Form),
(4) Having a live, single, healthy fetus.

Exclusion criteria were:
(1) Having hearing deficiencies, (2) Not agreeing to participate, (3) Being illiterate, (4) Having communication problems, (5) Being admitted with severe pre-eclampsia, (6) The newborn not being alive.

2.4. Study protocol

Out of 126 pregnant women who were hospitalized were evaluated with regard to how appropriate they were for the study and 84 of those women were included in the study. After second evaluation, for reasons such as infant deaths and staying at the clinic for less than five days, 14 women were excluded and 70 women were included in the study (Fig. 1).

Using a computer program module designed for randomized controlled studies (http://www.randomizer.org/form.htm), a randomization list was formed and participants were accordingly assigned to the study and control groups. Participants were numbered according to their order of admittance to the hospital, and they were assigned randomly to the study and control groups in two equal groups (experimental group n = 35, control group n = 35). According to the results of the randomization, there could be two