The Effects of Murottal and Classical Music Combination toward Pregnant Women's Anxiety in the 3rd Trimester

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ABSTRACT

Background: Pregnancy, give birth and breastfeeding process is a source of anxiety for pregnant women. Music therapy is considered as complementary therapy. The type of music that has medical purpose is Mozart's classical music because it has a soft tone and stimulates alpha waves, calmness, and relaxation and nowadays Kitaro music to create relaxation. Methods: Research to distinguishing anxiety response and which type of music is more effective in reducing anxiety between murottal , Kitaro and combination music toward pregnant women's 3rd trimester anxiety. This study quasi-experimental using pre-test post-test design. The sample size was 40 people divided into 4 groups. The independent variables include murottal, classical, combination and without music. The dependent variable is anxiety. It is carried out by looking for the mean before and after the intervention then analyzing by t-test and continued with the MANOVA. Results: Analysis of the combination music group p value 0.03 (p<0.05) and the difference between before and after intervention, smaller delta is 10.9. Conclusion: Kitaro and murotal music influences to reduce anxiety of third trimester pregnant women. Music combination between murotal and music kitaro has a significant effect on reducing anxiety of third trimester pregnant women.

Keywords: Murottal, Classical music, Anxiety

INTRODUCTION

Background

Pregnancy, childbirth, and lochia are major events for a woman in having a family. However, in some cases, childbirth is not a happy event but a time of pain, fear, suffering and even fear of death[1]. Pregnancy can be a source of anxiety stressors, especially for an unstable woman. Anxiety during pregnancy is inevitable moment and almost always accompanies the pregnancy. During pregnancy, pregnant women experience physical and psychological changes that may lead to discomfort especially in the 3rd trimester such as dyspnea, insomnia, gingivitis and epulis, frequent urination, pressure and perineal discomfort, back pain, constipation, varicose veins, fatigue, Braxton hick contraction, leg cramps, ankle edema (non-pitting), mood changes, and increased anxiety. Therefore, to avoid pregnant women from anxiety, everything that can help during the pregnancy and childbirth need to be prepared. If it is not treated appropriately, pregnancy complaints will lead to childbirth complications, causing concern and anxiety to the pregnant women[2].

In Indonesia, studies conducted on 3rd trimester of primigravida found that 33.93% of pregnant women experienced anxiety. Another study stated that normal pregnant women, in facing the childbirth, experienced 47.7% severe anxiety, 16.9% moderate anxiety, and 35.4% experienced mild anxiety. The problems mentioned above are impossible to happen if the service unit of pregnant women has carried out comprehensive care including interventions for psychosocial problems[1].

Prevention using several methods is needed to relieve and prepare women in maintaining their pregnancy and childbirth process. Prevention of childbirth complications aims to make women and newborns get a high

degree of health and avoid sharing threats and reproductive functions. Therefore, the balance of body and mind must always be maintained to create a calm and comfortable mind. In addition, both body and mind can work in balance, so that it will lead to a calm and happy pregnancy and childbirth. Alternative therapies needed in pregnancy are massage and energy therapy such as massage, acupressure, therapeutic touch and healing touch and mind body healing such as imagery, meditation/ yoga, prayer, biofeedback reflection. Research findings on therapy using music found that 97% of patients reported that music helped them relax during the healing process. Music is a universal language that can be enjoyed by everyone from babies to parents. Music can be used as a means of appreciation, entertainment, lifestyle, business, balancing strategy, and therapy because it is considered to provide psychological healing such as feeling happy, strong, calm and relaxed when listening and enjoying the strains and rhythms of music with a happy feeling. In the field of medicine, music therapy is known as complementary medicine. The type of music used in music therapy can be adjusted to the wishes, such as classical music, instrumental, and slow music. There are many types of music that can be played, but music that places its class as medical music is classical music; for instance, Mozart. This type of music has a tremendous magnitude in the development of health science because it has a soft tone, provides alpha wave stimulation, calmness, and makes the listeners more relaxed. Besides Mozart, there is a stream of modern music; the new age, one of which is Kitaro's work. Kitaro's music has been widely known and favored by many people. New age music (Kitaro) is often used as illustrative music on several television shows or movie soundtracks, shopping centers and bookstores to give visitors a pleasant and calming feeling[2].

In the previous studies, researchers have obtained the findings that there is an effect of music therapy to pain response and stage I duration. Moreover, in the next study, researchers obtained findings that classical Mozart music is more effective in shortening the stage I duration and the Kitaro instrument can reduce pain. Thus, researchers are drawn back to examine that which music is more effective can reduce pregnant women's anxiety level in the 3rd trimester during the childbirth[3].

Purpose

It is to prove which type of music is more effective for reducing anxiety level between murottal combination and classical music against pregnant women's anxiety in the 3rd Trimester during the childbirth.

METHODS

This research is an experimental study using pretest-posttest with control group. This study gave treatment to 3 experimental groups and 1 control group. 3 groups were treated with music therapy according to the type of music approximately 30 minutes which included: group A used murottal music, group B used classical music, C used music combination, group D used no music (control group). The three groups (A, B, C) were treated with music relaxation as much as 1 time for 30 minutes, previously the anxiety level was measured according to HARS (pre-intervention). The treatment was continued at home every day for about 30 minutes for 2 weeks. After two weeks of control, the anxiety level was measured again based on HARS[4].

The target population in this study were all pregnant women in the 3rd trimester of multigravida who gave birth in the Community Empowerment Agency of Magetan Regency. The sample of this study were pregnant women in the 3rd trimester of multigravida who were in accordance with the inclusion and exclusive criteria. Inclusion criteria of this study included: multigravida according to PujiRoyati Score <10 (low risk), normal gestational age (37-40 weeks), single fetus, head presentation. The exclusion criteria of this study according to PujiRoyati Score are >10 (high risk); i.e. women who experience: pregnancy poisoning, bleeding, baby location abnormalities, history of sectiocaesarea, comorbidities (heart and lung), mental disorders, and refuse to becomeresearch respondents[1],[2].

The sampling technique applied multistage random sampling, which started with grouping of samples based on region or population location. After that, stratification and sampling were carried out using simple random sampling technique. The sampling process of this study was conducted by selecting 4 sub-districts in the Magetan Regency area. Sampling,conducted at the Community Empowerment Agency in the MagetanSubdistrict area, was carried out proportionally in which samples were grouped according to inclusion criteria[1][2].

The research sampleswere 40 people which were in accordance with the criteria set by the researcher consisting of 4 groups in which each group consisted of 10 people; group A at Santi Community Empowerment Agency using murottal music, group B at Heru Community Empowerment Agency using natural music, group C at Titik Community Empowerment Agency using music combination and group D at Widi Community Empowerment Agency without using music treatment (control group). The data were analyzed using univariate analysis and bivariate analysis[1][2].

RESULTS

Respondent Characteristics by the Age

All respondents on average under the age of 40, their multigravidas exceed the age of healthy reproduction. In group A (murottal music), the average age of the respondents was 28.4 years (standard deviation ± 5.6) with the youngest age of 20 years and the oldest age of 38 years. In group B (modern instrumental Kitaro), the average age of respondents was 29.7 years (standard deviation ± 5.7) with the youngest age of 21 years and the oldest age of 39 years. In group C (music combination) (A and B groups), the average age of the respondents was 29.1 years (standard deviation ± 6.6) with the youngest age of 19 years and the oldest age of 38 years. In the D/ control group (without music treatment), the average age of the respondents was 28.0 years (standard deviation ± 5.3) with the youngest age of 21 years and the oldest age of 39 years.

Based on the respondents' age, they were included in the reproductive age range or belong to women of childbearing age. This age makes it possible to think mature in dealing with problems or troubles of discomfort due to changes in pregnancy and childbirth. They are expected to be able to do coping and try to find help from health workers.

Respondent Characteristics by the Age of Pregnancy

In group A (murottal music), the average age of the respondents was 36.0 years (standard deviation ± 3.46) with the youngest age of 29 years and the oldest age of 39 years. In group B (modern instrumental Kitaro), the average age of respondents was 32.6 years (standard deviation ± 3.09) with the youngest age of 30 years and the oldest age of 39 years. In group C (music combination) (A and B groups), the average age of the respondents was 34.5 years (standard deviation ± 3.30) with the youngest age of 29 years and the oldest age of 39 years. In the D/ control group (without music treatment), the average age of the respondents was 35.9 years (standard deviation ± 3.85) with the youngest age of 28 years and the oldest age of 39 years.

Based on the age of pregnancy, all respondents were in the 3rd trimester. In this trimester, there are psychological and emotional changes because women prepare themselves with vigilance waiting for signs and symptoms for childbirth. Therefore, anxiety occurs in this trimester.

Respondent Characteristics by the Educational Level

The majority of respondents' education is basic education (elementary, junior high, and senior high/ vocational high schools). The highest education level of the respondents is the elementary level (elementary, junior, and high schools). The level of formal education a person has makes it possible to improve self-concept in solving problems they face. The level of knowledge of pregnant women plays an important role in efforts to reduce maternal and child mortality in improving health status. Behavior based on knowledge will be more sustainable. The higher the level of education of a person allows him/her to think rationally and hold their emotions well so that their anxiety can be reduced.

Respondent Characteristics by the Parity

The number of parities in group A (murottal music), G II is 80% and G IV is 20%. In group B (modern instrumental Kitaro), G II is 100%. In group C (music combination) (A and B groups), G II is 90% and G III is 10 %. In group D (control group), G II is 80% and G III is 20%.

Based on the level of parity all multigravida respondents have children one to four. In multigravida, anxiety levels are lower than primigravida or the first child because women are more experienced.

Tabel 1. Distribution of anxiety level before and after intervention toward multigravida pregnant women in the third trimester

Groups	Before Mean ± SD	After Mean ± SD	Min-Max	Δ	p-value
Group A	54.2 ± 9.05	35.3 ± 5.79	23 – 45	18.9	0.05
Group B	36.3 ± 10.69	24.2 ± 9.87	11 – 37	12.1	0.02
Group C	29.2 ± 6.49	18.3 ± 3.02	13 – 22	10.9	0.03
Group D	54.3 ± 15.29	42.9 ± 17.94	20 – 69	11.4	0.074

Tabel 2. Analysis results of murottal, kitaro and music combination groups compared to control group

Music Groups	Before	After	Δ	p-value
Group A : Control	54.3	42.9	0.1	0.71
Murottal	54.2	35.3	7.6	0.26
Group B : Control	54.3	42.9	0.1	0.71
Instrumental Modern Kitaro	36.3	24.2	18.0	0.005
Group C : Control	54.3	42.9	25.1	0.001
Music Combination (A and B)	29.2	18.3	24.6	0.003

Tabel 3. Differences in respondents' pulse rate and respiration before and after the intervention

Vital Signs	Group A	Group B	Group C	Group D	p-value
	Mean	Mean	Mean	Mean	
Systole	-1	1	6	-1	0.01
Diastole	3.40	4.00	6.00	4.00	0.00
Pulse	1.30	3.20	4.00	1.90	0.38
Respiration	1.2	1.6	0.8	1.2	0.07

DISCUSSION

Descriptive Analysis

In group A (murottal music), the average score of respondents' anxieties before intervention is 54.2 (standard deviation ± 9.05) and after intervention is 35.3 (standard deviation ± 5.79); so, that there is a difference of 18.9 with p-value 0.005.In group B (modern instrumental Kitaro), the average score of respondents' anxieties before intervention is 36.3 (standard deviation ± 10.69) and after intervention is 24.2 (standard deviation ± 9.87); so, that there is a difference of 12.1 with p-value 0.002 (p < 0.005) meaning that there is a meaningful difference. In group C (music combination) (A and B groups), the average score of respondents' anxieties before intervention is 29.2 (standard deviation ± 6.49) and after intervention is 18.3 (standard deviation ± 17.94); so, that there is a difference of 10.9 with p-value 0.003 (p <0.005) meaning that there is a significant difference. In group D/control group (without treatment), the average score of respondents' anxieties before intervention is 54.3 (standard deviation ± 15.29) and after intervention is 42.9 (standard deviation ± 17.94); so, that there is a difference of 11.4 with p-value 0.074 (p <0.005) meaning that there is no difference[2][5].

The description analysis shows that all p-value were <0.05, which means there are differences of respondents' anxieties before and after treatment which apply to all types of music other than the control group. In accordance with the research findings, music can reduce the level of depression and reduce anxiety in pregnant women in the 3rd trimester[6][7].

Bivariate Analysis

In group A (murottal music), the average score of respondents' anxieties before intervention is 54.2 (standard deviation ± 9.05) compared to the average score of control group is 54.3; the difference is 0.1 with p-value of 0.071. After intervention, the score is 35.3 (standard deviation ± 5.79) and the control group is 42.9; the difference is 7.6 with p-value of 0.26. In group B (modern instrumental Kitaro), the average score of respondents' anxieties before intervention is 36.3 (standard deviation ± 10.69) compared to the average score of control group is 54.3; the difference is 18.0 with p-value of 0.005. After intervention, the score is 24.2 (standard deviation ± 9.87) and the control group is 42.9; the difference is 18.7 with p-value of 0.011 (p < 0.005) meaning that there is a meaningful difference. In group C (music combination) (A and B groups), the average score of respondents' anxieties before intervention is 29.2 (standard deviation ± 6.49) compared to the average score of control group is 54.3; the difference is 25.1 with p-value of 0.001 (p < 0.005) meaning that there is a significant difference. After intervention, the score is 18.3 (standard deviation ± 3.02) and the control group is 42.9; the difference is 18.7 with p-value of 0.011 (p < 0.005) meaning that there is a meaningful difference.

Based on the description above, the combination of murottal and classical music is very effective in significantly reducing pregnant women's anxiety of in the 3rd trimester compared to other types of music

because listening to murottalmusic can soothe the soul (grateful and surrender to the Creator). Meanwhile, classical music aims to create inspiration, relaxation and optimism. Some types of music use the entrainment method of binaural beats, and brain waves such as beta, alpha, theta, and delta. Alpha waves aim to generate relaxation. In addition, beta waves are related to mental activity. Then, theta waves are associated with stress and creativity efforts. Meanwhile, delta waves are connected with sleepy situations so that this music serves to ease tension. This is in accordance with the theory which states that relaxation accompanied by soft music is proven to reduce anxiety toward pregnant women during their pregnancy[4][3].

Differences of Respondents' Pulse Rate and Respiration Before and After the Intervention

The mean reduction in systolic pressure in group A is -1.0 mmHg, group B is 1.0 mmHg, group C is 6 mmHg, and group D is -1 mmHg with p-value 0.01 (p <0.005) which means that there is difference. The average diastolic pressure in group A is 3.40 mmHg, group B is 4.00 mmHg, group C is 6.00 mmHg, and group D is 4.00 mmHg with p-value 0,000 (p <0.005) which means that there is difference. The average pulse frequency in group A is 1.30 / minute, group B is 3.20 / minute, group C is 4.00 / minute, and group D is 1.90 / minute with p-value 0.038 (p < 0.005) which means that there is a significant difference in the difference in pulse frequency. The average decrease in respiration frequency in group A is 1.2 × / minute, group B is 1.6 × / minute, group C is 0.8 × / minute, and group D is 1.2 × / minute with p-value 0.007 (p> 0.005) which means that there is no significant difference in the respiration frequency. The descriptions above show that the physiological response of systole, diastole and respiratory pressure had a significant difference (p < 0.05) while the pulse did not have a significant difference (p > 0.05).

This study found that music affects the psychological condition of individuals who show physical and mental reactions in response to music. The reaction takes the form of calm relaxation so that there are changes in blood pressure and breathing.

Relaxation music is induced by a regulatory system involving nitric oxide (NO) as neurotransmitter and a hormone that moves locally in the brain. NO is a molecule responsible for physiological and psychological relaxation effects that also help the development of the auditory system and participate in cochlear blood flow. The music sensation will enter the emotional center then the limbic system will be activated. This relaxation induction will improve the work of the autonomic nerve so that it will affect peripheral vasodilation, skin warmth, and decreased heart rate so as to improve mental well-being.[8][9]

CONCLUSION

Kitaro murotal and instrumental music type influences to reducing anxiety of third trimester pregnant women before and after the treatment compared to the control group. Music combination between murotal and instrumental kitaro has a significant effect on reducing anxiety of third trimester pregnant women.

Community Empowerment Agency should motivate pregnant women to listen to music to stimulate and reduce their anxiety. Pregnant women should listen to music to stimulate their babies since the early trimester. Whereas, in the final trimester, it's better to hear a lot of combination of murotal and classical music to reduce anxiety. Then, further research with topic related to implementing interventions should play music therapy through headphones to be more focused.

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