

# Combining Deep Relaxation Techniques with Music Therapy to Reduce Postpartum Pain

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## ABSTRACT

Postpartum mothers commonly experience pain caused by uterine contractions, which can activate the sympathetic nervous system and lead to changes in blood pressure, heart rate, and respiratory rate. If unmanaged, this pain may contribute to heightened anxiety, tension, fear, and stress. Non-pharmacological approaches to pain relief are often preferred due to their minimal risk, such as deep breathing relaxation techniques and music therapy. This study aimed to evaluate the effectiveness of combining deep breathing relaxation and music therapy in reducing postpartum pain. The research employed an experimental Pretest-Posttest Design, involving 20 participants selected through accidental sampling. Data collection was conducted using observation sheets and standard operating procedures (SOPs), and the Wilcoxon test was applied for analysis. Results indicated that after receiving deep breathing relaxation techniques, pain reduction was observed in 16 participants, with a mean rank of 10.38 and a p-value of 0.000. Two participants reported increased pain, while two showed no change. Following music therapy, 12 participants experienced pain relief, with a mean rank of 9.38 and a p-value of 0.003. Meanwhile, pain increased in 3 participants and remained unchanged in 5. These findings highlight the importance of healthcare providers in teaching relaxation and music therapy techniques to postpartum mothers, as these interventions can promote relaxation and significantly alleviate pain.

**Keywords:** deep breathing, music therapy, relaxation techniques

## BACKGROUND

Post partum is a period in the first weeks after birth. The length of this “period” is uncertain, most consider it to be between four to six weeks. Even though it is a relatively uncomplicated period compared to pregnancy, postpartum is marked by many physiological changes. While some of these changes may only slightly bother the mother, serious complications are also common (Cunningham, F, et al, 2013).

Throughout the world there are around 160 million pregnant women every year. There are around 15% who suffer serious complications, of which one third are complications that threaten the mother. The consequences of these complications cause the deaths of more than half a million mothers every year. It is estimated that 90% occurs in Asia and Sub-Saharan Africa, 10% in other developing countries, and less than 1% in developed countries. In some countries, maternal mortality is higher and the risk is more than 1 in 10 pregnancies, but in developed countries this risk is less than 1 in 6,000 (Prawirohardjo, 2014).

Approximately around 15% of all pregnant women, the birth rate in Indonesia is still high and complications occur during childbirth. To overcome complications, one way out is to carry out a Caesarean section to treat births with complications. According to the World Health Organization (WHO) (2015), the standard for Sectio Caesarea births in England in 2010, Sectio Caesarea data increased by 24.6%, in 2008 it was 23.5% and in Australia in 2010 there

was an increase of 31%, in 2008 it was 21%, but in Indonesia, Sectio Caesarea births in Indonesia were 15.3% of the sample of 20,591 mothers who gave birth in the last 5 years. surveyed from 33 provinces. There are risk factors for mothers during childbirth and Caesarean operations, namely 13.4% in the form of premature rupture of membranes, 5.49% in the form of preeclampsia, 5.14% in the form of bleeding, 4.40% Abnormalities in the location of the fetus, 4.2% (Risksdas RI, 2015).

The largest proportion of birth attendants were midwives at 62.7% and obstetricians at 28.9%. Based on demographic characteristics, the higher the education of the birthing mother, the higher the percentage of birth assistance by health workers. Meanwhile, based on place of residence, the proportion of deliveries by health workers in urban areas is higher (96.7%) than in rural areas (88.9%). Maluku Province (33.4%), North Maluku (26.1%) and East Nusa Tenggara (16.1%) are the provinces with the highest proportion of births by traditional birth attendants. (Basic Health Research 2018, Balitbangkes, Indonesian Ministry of Health, 2019).

Coverage of postpartum visits (KF3) in Indonesia shows an increasing trend from 2008 to 2019, the trend line shows there has been a decrease in coverage since the last 2 years. Achievements of postpartum visits by province in Indonesia (Directorate General of Public Health, Indonesian Ministry of Health, 2020).

Based on data from the last 3 years, the number of post-partum patients from the obstetrics room census at Kudungga Regional Hospital from 2018 to 2020, the number of post-partum mothers with normal parturition was 658 people, mothers with sc surgery were 784 people.

The results of a preliminary study conducted in March 2021 at the Kudungga Regional General Hospital on 5 normal post partum mothers, 3 normal post partum mothers obtained data that all mothers experienced pain on the 1st day, 4 mothers experienced pain > 3-4 hours post partum and 4 mothers experienced pain > 1-2 hours post partum. The characteristics of pain felt by postpartum mothers on day 1 are heartburn in the lower abdomen on a scale of 4-5, which means moderate pain. The pain felt by uterine contractions occurs when the mother is silent and doing activities. The duration of the pain felt by the mother is around 1-5 minutes.

The results of interviews conducted with 3 midwives who were in the Maternity/VK room at Sangatta Regional General Hospital stated that management of post partum pain was carried out by directly administering oral or intravenous analgesic drugs according to the advice of an obstetrician and gynecology specialist.

Pain or pain in postpartum mothers who give birth normally is pain from uterine contractions which has the impact of increasing the activity of the sympathetic nervous system, changes in blood pressure, heart rate, breathing and if not treated, it will increase feelings of worry, tension, fear and stress (Bennet and Brown). Pain management methods include pharmacological and non-pharmacological approaches. Non-pharmacological pain relief methods are usually chosen because they have very low risks.

Method The breathing relaxation technique is a pain relief technique that provides the greatest input because relaxation techniques in labor can prevent excessive mistakes after delivery. Relaxing breathing during the birthing process can maintain the components of the sympathetic nervous system in a state of homeostasis so that there is no increase in blood supply, reducing anxiety and fear so that the mother can adapt to pain during the birthing process (Prasetyo, 2018).

One very effective distraction is audio distraction, namely using music, which can reduce physiological pain, stress and anxiety by diverting a person's attention from pain (Kevin A.P, et al, 2016). Music therapy has been recognized as a form of complementary therapy besides acupuncture and massage therapy, apart from having an aesthetic aspect, it also has a therapeutic effect so that music is widely used to help heal, calm and improve physiological

conditions (Halim 2005 in Nanik Handayani 2011).

Music has extraordinary power and has an impact on the psyche. Music can help someone with a chronic illness become more relaxed, reduce stress, create a sense of security and prosperity, relieve feelings of sadness and become happy, and help relieve pain or illness. Music that is given intensely can provide full power in the sense that it can reflect one's emotions, enlighten the soul and be expressive. Music can slow down and speed up electrical waves in the brain so that it can change the work of the body's systems (Djohan, 2009).

Based on the phenomena that occur, especially in the postpartum room, it shows that there are still many complaints of pain submitted by mothers who have just experienced labor around their stomachs and birth canals, both mothers who gave birth spontaneously or through surgery. Based on this background, researchers are interested in finding out how effective deep breathing relaxation techniques and music therapy are for post partum pain.

## METHODS

The type of research method used in this study is quantitative research. Quantitative research is research that aims to find relationships or explain the causes of changes based on measurable facts and find generalizations based on quantitative or numerical data (Sugiyono, 2014). Based on the research objectives, the design used is a quasi-experiment using a pre and post test research design, this study design aims to determine the effect of the independent variable on the dependent variable, namely reducing postpartum pain with a combination of deep breathing relaxation techniques and music therapy.

## RESULTS

A leading hospital is defined as one that excels in human resources, services, and infrastructure, while a professional hospital is characterized by its personnel's strong knowledge, skills, and ethical behavior. To transform this vision into reality, Kudungga Hospital has outlined a mission consisting of several strategic goals. These include providing comprehensive, high-quality, and affordable health services that prioritize community satisfaction and environmental sustainability; offering superior service products such as Medical Check-Up (MCU), Perinatology, and Emergency Department (IGD) services; developing professional human resources through continuous education and training; enhancing both the quality and quantity of healthcare facilities and infrastructure; and fostering long-term, mutually beneficial partnerships.

### Univariate Analysis

#### Respondent Frequency Distribution Based on Demographic Data

**Table 1.** Respondent Frequency Distribution Based on Age, Gender, Education and Occupation

No	Characteristics	Frequency	%
<b>1</b>	<b>Age</b>		
	18-25 Years	15	75,0
	26-32 Years	5	25,0
<b>2</b>	<b>Education</b>		
	Elementary School	11	55,0
	Junior High School	4	20,0
	High School	2	10,0
	College	3	15,0
<b>3</b>	<b>Job</b>		
	Housewife	11	55,0
	Self-employed	9	45,0

<b>4 Parturition</b>		
Normal	14	70,0
SC	6	30,0

Based on table 1, it is known that the distribution of respondents based on age, most respondents are in the age category of 18-25 years, as many as 15 respondents (75%), based on education level, most respondents are elementary school graduates, namely 11 people (55%) and based on occupation, most respondents are IRT (Housewives), namely 11 respondents (55%). Respondents with Normal Partus are 14 respondents and SC are 6 respondents.

## **DISCUSSION**

The study results indicate that the average level of postpartum pain before the application of deep breathing relaxation techniques was 4.70, categorized as moderate pain, with a minimum score of 4, a maximum score of 7, and a standard deviation of 0.801. Similarly, before the administration of music therapy, the average pain level was 4.65, also classified as moderate pain, with a minimum score of 4, a maximum score of 6, and a standard deviation of 0.745. After the application of deep breathing relaxation techniques, the average pain level significantly decreased to 2.50, categorized as mild pain, with a minimum score of 1, a maximum score of 5, and a standard deviation of 1.395. Furthermore, postpartum pain after music therapy also showed a reduction, with an average pain level of 3.10, classified as mild pain, with a minimum score of 1, a maximum score of 6, and a standard deviation of 1.483. These findings suggest that both interventions were effective in reducing postpartum pain, with deep breathing relaxation showing slightly greater effectiveness.

Analysis of reducing post-pastum pain with a combination of deep breathing relaxation techniques and music therapy.

The results of the study showed that there was a difference in the average difference between treatment before and after deep breathing therapy and music therapy for pain where the average pain before being given the deep breathing relaxation technique was 4.70 (moderate pain) and after being given the deep breathing relaxation technique was 2.50 (mild pain) with a difference of 2.20 and  $p=0.000$ . Meanwhile, the average pain before being given music therapy was 4.65 and after being given music therapy was 3.10 with a difference of 1.55 and a  $p$ -value = 0.003. This shows that deep breathing relaxation techniques are more effective in reducing the pain scale compared to music therapy even though both have an influence on reducing the pain scale.

This research is in line with research conducted by Batubara et al (2017) where the results of the study showed that there was an average difference between the pain levels of post-Caesarean section surgery patients after being given classical music therapy, or in other words, classical music was effective in reducing post-caesarean section surgery pain as evidenced by the average reduction in pain of 2.28, higher than those who did not listen to classical music, namely 0.60. Other research was also conducted by Khodriyati (2018) with the results of the Wilcoxon statistical test showing a  $p$  value  $< 0.05$  so that the combination of music therapy and deep breathing relaxation techniques can significantly reduce the patient's pain intensity.

Relaxation is a non-pharmacological pain management that has a very good effect on treating pain. Relaxation will cause a decrease in the hormone adrenaline, which will cause a feeling of calm and decreased sympathetic nerve activity, which will cause a decrease in pain. According to research by Houston and Jesurum in Purwanto, E., (2011). The deep breathing relaxation technique is a technique used to suppress pain in the thalamus which is sent to the

cerebral cortex where the cerebral cortex is the center of pain, which aims to enable the patient to reduce pain as long as the pain occurs.

The deep breathing relaxation technique is one way to reduce pain in birthing mothers non-pharmacologically. By taking a deep breath when there is a contraction using chest breathing through the nose, oxygen will flow into the blood which is then circulated throughout the body, releasing endorphins which are natural pain relievers in the body (Winy, 2015).

The intensity of pain after giving music therapy decreased because music therapy functions as a distraction outside of the pain felt by the patient which can provide a feeling of comfort so that they can control or eliminate the pain. This is in accordance with Mahami's (2013) statement that the effect of music therapy on pain is to distract thoughts about pain, reduce anxiety, stimulate a more regular breathing rhythm, reduce body tension, provide positive visual imagery, relaxation, and increase positive mood. Music therapy can encourage positive health behaviors, encouraging patient progress during treatment and recovery.

Music produces changes in the state of consciousness through sound, silence, space and time. Music must be listened to for at least 15 minutes to have a therapeutic effect. In acute care settings, listening to music can provide very effective results in reducing patient pain (Potter & Perry, 2012). Music also stimulates the release of endorphins, body hormones that provide feelings of pleasure which play a role in reducing pain so that music can be used to divert pain so that patients feel the pain is reduced (Vindora, Ayu, Pribadi, 2013).

Researchers assume that based on research results and theory, deep breathing relaxation techniques and music therapy both have an influence on reducing pain intensity, however, in this study it was concluded that deep breathing relaxation techniques are more effective than music therapy. The role of health workers is very much needed to teach deep breathing relaxation techniques and music therapy to patients who experience pain. Deep breathing relaxation techniques and music therapy can make a person more relaxed, thereby reducing the amount of pain.

## CONCLUSION

Based on the results of a 2021 study conducted on the effectiveness of deep breathing relaxation techniques and music therapy in reducing postpartum pain, it can be concluded that both interventions were effective in lowering pain levels. Before receiving the deep breathing relaxation technique, the average pain score was 4.70 (moderate pain), with a minimum of 4, a maximum of 7, and a standard deviation of 0.801. Similarly, before receiving music therapy, the average pain score was 4.65 (moderate pain), with a minimum of 4, a maximum of 6, and a standard deviation of 0.745. After the deep breathing relaxation technique was applied, the average pain score decreased to 2.50 (mild pain), with scores ranging from 1 to 5 and a standard deviation of 1.395. Following music therapy, the average pain score also decreased to 3.10 (mild pain), with a range of 1 to 6 and a standard deviation of 1.483. Statistical analysis using the Wilcoxon test revealed that 16 respondents experienced a decrease in pain after receiving deep breathing relaxation, with a mean rank of 10.38 and a p-value of 0.000; meanwhile, 2 respondents reported increased pain, and 2 remained unchanged. In the case of music therapy, 12 respondents experienced reduced pain with a mean rank of 9.38 and a p-value of 0.003, while 3 reported increased pain, and 5 reported no change.

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