Papua Medicine and Health Science (PMHS)
Volume 2, Nomor 1, 2025
https://jurnal.fk-unipa.com/index.php/PMHS

The Effect of Classical Music Therapy on Reducing Pain Scale in Post-Cesarean Section Patients

Suriana[*1], Erlin Herman[2]

[1,2] Program Studi Kebidanan, Universitas Kurnia Jaya Persada Palopo, Indonesia

ARTICLE INFO

Article history

Received: 27 May 2025
Revised: 04 June 2025
Accepted: 30 June 2025

Keywords:

Postpartum Women, Non-Pharmacological Intervention, Postoperative Pain, Cesarean Section, Classical Music Therapy

ABSTRACT/ ABSTRAK

ABSTRACT. *Cesarean section is a surgical procedure that can lead to postoperative pain due to disrupted tissue continuity. Pain management generally involves the use of analgesics; however, non-pharmacological therapies such as classical music may serve as complementary interventions to reduce pain perception. This study aimed to evaluate the effect of classical music therapy on reducing the pain scale in postpartum women following cesarean section. This research employed a quasi-experimental design using a one-group pre-test and post-test with control group approach, involving 30 postpartum women selected through total sampling. The intervention consisted of playing classical music for 20 minutes per day over two consecutive days, with pain levels measured using the Numeric Rating Scale (NRS) before and after the intervention. The results showed a significant difference in pain scores before and after classical music therapy ($p < 0.05$), indicating the therapy's effectiveness in reducing post-cesarean section pain. Therefore, classical music therapy may serve as an effective non-pharmacological approach to managing postoperative pain in postpartum women.*

Kata kunci:

Ibu Nifas, Intervensi Non-Farmakologis, Nyeri Postoperasi, Sectio Caesarea, Terapi Musik Klasik

ABSTRAK. Sectio caesarea merupakan tindakan pembedahan yang dapat menyebabkan nyeri pascaoperasi akibat gangguan kontinuitas jaringan. Penanganan nyeri umumnya menggunakan analgesik, namun terapi non-farmakologis seperti musik klasik dapat menjadi intervensi tambahan untuk mengurangi persepsi nyeri. Penelitian ini bertujuan untuk menilai pengaruh terapi musik klasik terhadap penurunan skala nyeri pada ibu nifas pascaoperasi sectio caesarea. Desain penelitian ini adalah quasi-eksperimen dengan pendekatan one group pre-test and post-test with control group, melibatkan 30 ibu nifas yang dipilih melalui teknik total sampling. Intervensi berupa pemutaran musik klasik selama 20 menit per hari selama dua hari, dan skala nyeri diukur menggunakan Numeric Rating Scale (NRS) sebelum dan sesudah intervensi. Hasil penelitian menunjukkan perbedaan yang signifikan pada skala nyeri sebelum dan sesudah pemberian terapi musik klasik ($p < 0,05$), yang menandakan bahwa terapi ini efektif dalam menurunkan nyeri post-sectio caesarea. Dengan demikian, terapi musik klasik dapat menjadi salah satu pendekatan non-farmakologis yang efektif dalam manajemen nyeri pascaoperasi pada ibu nifas.

Corresponding Author:
Suriana
Program Studi Kebidanan, Universitas Kurnia Jaya Persada Palopo, Indonesia
Email: Suriana759@gmail.com

INTRODUCTION

Every woman naturally hopes for a smooth childbirth process and the safe and healthy delivery of her baby. In achieving this, healthcare professionals play a vital role in managing labor skillfully and professionally, as well as in preventing complications for both mother and fetus (Sulistyawati & Nugraheny, 2010). However, not all deliveries can proceed spontaneously. Under certain conditions, cesarean section becomes a justified medical procedure, particularly for managing cases such as fetal distress, cephalopelvic disproportion, prolonged labor, placenta previa, umbilical cord prolapse, malpresentation, narrow pelvis, and preeclampsia (Louwen et al., 2022). Other medical indications such as pelvic contractions, dystocia, major placenta previa, severe eclampsia, and signs of fetal compromise are also critical reasons for performing this procedure to reduce maternal and perinatal mortality rates (Shivanna et al., 2020). In specific situations such as deeply engaged fetal head or placenta previa cases, clinical skills of medical personnel are essential to manage complications and ensure a safe and optimal delivery outcome (Beraldo, 2022).

Although cesarean section aims to save the lives of both mother and baby, it brings physiological consequences, one of which is postoperative pain caused by surgical incisions and tissue discontinuity. This pain reduces comfort, limits mobility, and interferes with infant care and breastfeeding. Approximately 68% of postpartum women after cesarean section experience difficulties in caring for their babies and breastfeeding due to pain (Mas'adah & Rusmini, 2018; Singh et al., 2022), including challenges in movement and finding a comfortable breastfeeding position, ultimately hindering early breastfeeding initiation (Fibriansari et al., 2022; Hicyilmaz & Cirpanli, 2022). This condition also leads many mothers to delay early breastfeeding, which impacts breastfeeding success (Oktaverina, 2022; Rini et al., 2018).

To date, postoperative pain is generally managed using analgesics. However, a pharmacological approach alone is not sufficient to encourage patients to develop independent pain control mechanisms. Therefore, a combination of pharmacological and non-pharmacological therapies is needed to enhance pain management effectiveness and accelerate recovery. Non-pharmacological approaches have the advantage of reducing pain intensity without causing side effects and can be used to alleviate pain over short durations (Solehati et al., 2022).

One non-pharmacological intervention considered effective, accessible, and economical in managing pain and anxiety in postpartum women after cesarean section is music therapy. Music is known to influence mood, reduce muscle tension, and enhance psychological comfort. Specifically, classical music with its regular rhythm and soft tones can stimulate alpha brain waves that produce a deep relaxation effect, provide emotional calm, and reduce pain perception (Yorpina, 2020). This type of music holds medical value, not only by reducing discomfort but also by supporting early mother–infant interaction, which is essential for successful early breastfeeding. Various studies have shown that classical music therapy provides significant benefits in managing pain and anxiety. Haque et al. (2022) and Chehreh & Tavan (2023) emphasized that classical music has a measurable analgesic effect for postoperative mothers. In addition, psychological benefits were demonstrated by Manurung & Kuncoro (2024), who found that listening to music contributes significantly to reducing postoperative anxiety. The calming effects of music are further supported by findings from Toker et al. (2021), which explain that classical music plays a key role in promoting emotional recovery and strengthening early bonding between mother and infant.

Although various studies have explored non-pharmacological approaches to managing post-cesarean pain, limited research has specifically evaluated the effectiveness of classical music therapy as part of pain management, particularly in regional hospitals using controlled experimental designs. Furthermore, most previous studies have not linked the intervention's effects to the overall recovery process in postpartum women. Based on this background, this study aims to analyze the effect of classical music therapy on reducing pain scale in postpartum women after cesarean section at Dr. Hasri Ainun Habibie Hospital, Parepare City.

RESEARCH METHOD

This study employed a quasi-experimental design using a one-group pre-test and post-test with control group approach. The research was conducted from September to October 2024 at Dr. Hasri Ainun Habibie Hospital, Parepare City. The study population consisted of all postpartum women following cesarean section who were receiving care at the hospital. The sample was selected using a total sampling technique, with a total of 30 respondents divided into two groups: 15 in the intervention group and 15 in the control group.

The instruments used in this study included an MP4 player and headphones for delivering classical music, as well as observation sheets to record pain assessments before and after the intervention. Pain was measured using the Numeric Rating Scale (NRS), a numerical scale ranging from 0 to 10 that reflects the intensity of pain from no pain to the most severe pain. The procedure began with assessing pain levels in all postpartum women starting 24 hours after surgery. The initial assessment (pre-test) was conducted five minutes before the intervention using the NRS. Subsequently, the intervention group received classical music therapy by listening to music via a mobile phone for 20 minutes once daily for two consecutive days, at the same time each day. Ten minutes after each intervention, a follow-up pain assessment (post-test) was conducted using the same instrument. Meanwhile, the control group received standard care without any music intervention.

The collected data were analyzed univariately to describe the characteristics of the respondents, and bivariately to examine differences in pain levels before and after the intervention. Bivariate analysis was conducted using the Wilcoxon Signed-Rank Test to evaluate the effect of classical music therapy on changes in pain scale in both the intervention and control groups. Statistical significance was determined at a 95% confidence level with a p-value threshold of < 0.05.

RESULTS

Respondent Characteristics

Table 1. Frequency Distribution by Age, Occupation, and Education of Respondents at Dr. Hasri Ainun Habibie Hospital, Parepare City, 2024

Characteristics	Intervention		Control	
	n	%	n	%
Age				
< 20 years	2	13,3	3	20
20 -35 years	12	80	11	73,3
>35 years	1	6,7	1	6,7

Occupation				
Housewives	9	60	10	66,7
Entrepreneurs	4	26,7	3	20
Civil Servants	2	13,3	2	13,3
Education				
Elementary	1	6,7	1	6,7
Junior High	2	13,1	1	6,7
Senior High	8	53,3	11	73,3
Bachelor's	4	26,7	2	13,3
Total	**15**	**100**	**15**	**100**

Based on Table 1, most respondents in both groups were aged between 20 and 35 years, with 12 respondents (80%) in the intervention group and 11 respondents (73.3%) in the control group. The smallest age group was >35 years, with only 1 respondent (6.7%) in both the intervention and control groups. In terms of occupation, the majority of respondents were housewives, totaling 9 respondents (60%) in the intervention group and 10 respondents (66.7%) in the control group. The smallest distribution was among civil servants, with 2 respondents (13.3%) in each group. Regarding educational background, most respondents had completed senior high school, accounting for 8 respondents (53.3%) in the intervention group and 11 respondents (73.3%) in the control group. The lowest level of education was elementary school, with 1 respondent (6.7%) in both the intervention and control groups, and junior high school with 1 respondent (6.7%) in the control group.

Univariate Analysis

Table 2. Frequency Distribution Based on History of Cesarean Section Delivery at Dr. Hasri Ainun Habibie Hospital, Parepare City, 2024

History of Cesarean Section	Intervention		Control	
	n	**%**	**n**	**%**
Yes	12	80	11	73.3
No	3	20	4	26.7
Total	15	100	15	100

Based on Table 2, 12 respondents (80%) in the intervention group and 11 respondents (73.3%) in the control group had previously undergone cesarean section delivery. Meanwhile, 3 respondents (20%) in the intervention group and 4 respondents (26.7%) in the control group had not experienced a cesarean section.

Table 3. Frequency Distribution Based on Pain Intensity Before Classical Music Therapy Intervention in Intervention and Control Groups at Dr. Hasri Ainun Habibie Hospital, Parepare City, 2024

Pain Intensity	Intervention		Control	
	n	%	n	%
Moderate Pain	5	33.3	4	26.7
Severe Pain	10	66.7	11	73.3
Total	15	100	15	100

Based on Table 3, most respondents were categorized as experiencing severe pain, with 10 respondents (66.7%) in the intervention group and 11 respondents (73.3%) in the control group. The remaining respondents reported moderate pain, with 5 respondents (33.3%) in the intervention group and 4 respondents (26.7%) in the control group.

Table 4. Frequency Distribution Based on Pain Intensity After Classical Music Therapy Intervention in Intervention and Control Groups at Dr. Hasri Ainun Habibie Hospital, Parepare City, 2024

Pain Intensity	Intervention		Control	
	n	%	n	%
Moderate Pain	11	73.3	10	66.7
Severe Pain	4	26.7	5	33.3
Total	15	100	15	100

Based on Table 4, the majority of respondents experienced moderate pain after the intervention, with 11 respondents (73.3%) in the intervention group and 10 respondents (66.7%) in the control group. The remaining respondents still experienced severe pain, with 4 respondents (26.7%) in the intervention group and 5 respondents (33.3%) in the control group.

Bivariate Analysis

Table 5. The Effect of Pre-Test and Post-Test in the Classical Music Therapy Intervention and Control Groups at Dr. Hasri Ainun Habibie Hospital, Parepare City, 2024

Group	Pain Intensity		n	Z	Sig. (2-tailed) p-value
Intervention	Pre-Test	Moderate Pain	5		
		Severe Pain	10	-3,520	0,000
	Post-Test	Moderate Pain	11		
		Severe Pain	4		
Control	Pre-Test	Moderate Pain	4		
		Severe Pain	11		
	Post-Test	Moderate Pain	10	-3,391	0,001
		Severe Pain	5		

Based on Table 5, the results of the Wilcoxon Signed-Rank Test showed a p-value of 0.000 ($p < 0.05$), indicating a statistically significant difference in pain intensity before and after the classical music therapy intervention in the intervention group. This result confirms that the alternative hypothesis (Ha) is accepted. The significance value of $0.000 < 0.05$ demonstrates that classical music therapy had a measurable effect on reducing pain in the intervention group.

Similarly, the control group also showed a statistically significant difference with a p-value of 0.001 ($p < 0.05$), suggesting some change in pain levels even without the music intervention, potentially due to the standard care and administration of analgesics.

DISCUSSION

Based on the results of the study, the pre-test pain intensity data in Table 2 showed that the highest pre-test value was severe pain, experienced by 11 respondents (73.3%) in the control group and 10 respondents (66.7%) in the intervention group. The remaining respondents were categorized as having moderate pain, with 5 respondents (33.3%) in the intervention group and 4 respondents (26.7%) in the control group. A similar study on postoperative pain by Fatmawati (2023) revealed that most patients experienced mild pain (54%), followed by moderate pain (46%). In general, pain is defined as a sensation of discomfort, which may range from mild to severe. The pain experienced by each individual

varies significantly depending on the person's perception, which is influenced by several factors, including age, anxiety, attention to pain, past experiences, occupation, knowledge, family support, and social support.

Post-Test Pain Intensity in the Intervention and Control Groups

According to the post-test pain intensity data presented in Table 4, the most frequently reported pain level after the intervention was moderate pain, observed in 11 respondents (73.3%) in the intervention group and 10 respondents (66.7%) in the control group. The remaining respondents experienced severe pain, with 4 respondents (26.7%) in the intervention group and 5 respondents (33.3%) in the control group.

This result is attributable to the intervention group receiving classical music therapy, which aims to improve pain tolerance, promote comfort and relaxation, and reduce physical tension, thus lowering the perception of pain. The intervention group also received standard analgesic medication, just like the control group. In contrast, the control group only received analgesic medication without any additional music intervention. Music therapy is known to modulate pain through the release of endorphins and enkephalins. According to the hormonal change theory, endorphins are substances or neurotransmitters similar to morphine, naturally produced by the body. These neurotransmitters bind specifically to certain receptors on neurons that are structurally designed to receive them. The presence of endorphins in the synapses of nerve cells leads to a reduction in pain sensation. Increased endorphin levels are closely associated with decreased pain perception, enhanced memory, improved appetite, sexual function, blood pressure regulation, and respiratory efficiency. Endorphins are known to produce a relaxing effect on the body. In addition, the midbrain releases gamma-aminobutyric acid (GABA), which functions to inhibit the transmission of electrical impulses from one neuron to another via neurotransmitters within the synapses. The midbrain also releases enkephalins and beta-endorphins, which further contribute to pain suppression (Potter, 2010).

The Effect of Classical Music Therapy on Reducing Pain Scale in Post-Cesarean Section Patients at Dr. Hasri Ainun Habibie Hospital, Parepare City

Based on the statistical analysis using the Wilcoxon Signed-Rank Test, a p-value of 0.000 ($p < 0.05$) was obtained, indicating a statistically significant difference in pain intensity before and after the classical music therapy intervention in post-cesarean section patients. This result confirms that classical music therapy is effective and has a significant impact on reducing pain scale in post-cesarean section patients.

Previous studies on the effectiveness of music therapy in reducing postoperative pain have also demonstrated significant differences in pain scores before and after the intervention. Statistical analysis confirmed that music therapy contributed to pain reduction in patients who underwent surgery in the surgical ward of Anutapura General Hospital in Palu, with a p-value of $0.001 < 0.05$ (Mutmainnah, 2020). Another study investigating the relationship between pain intensity and music therapy intervention among cesarean section patients found that the average pain score decreased from 2.00 before the intervention to 1.31 after, indicating the success of music therapy in lowering pain levels (Novita et al., 2019).

Music offers various benefits, including promoting relaxation, accelerating recovery, enhancing mental function, and generating a sense of well-being. In addition, music therapy can affect physiological functions such as respiration, heart rate, and blood pressure. Music

also contributes to reducing cortisol levels that increase during stress. Furthermore, music stimulates the release of endorphins, commonly referred to as the "happiness hormone," which play a key role in diminishing pain sensation (Natalina, 2019). Mozart's classical music is particularly characterized by its soft tones and a tempo of approximately 60 beats per minute, which can stimulate alpha brain waves and induce a sense of calm and comfort in listeners. The positive health benefits of this music are well documented. Compared to other types of classical music, Mozart's compositions stand out for their melodic structure and high frequency, which are known to stimulate creativity and mental motivation (Merdekawati, 2016; Rositawati, 2020).

The use of classical music by Wolfgang Amadeus Mozart is frequently recommended by researchers, particularly for medical purposes, and has been shown to have significant positive effects on health science development (Rositawati, 2020). The purpose of music therapy is to support individuals in expressing their emotions, aid in physical rehabilitation, influence mood and emotions, and improve memory. Moreover, music therapy provides a unique opportunity for communication and emotional connection. Therefore, it is expected that music therapy may help reduce stress, offer protection against illness, and relieve pain (Palele, 2022).

CONCLUSION

The statistical test results revealed a p-value of 0.000 ($p < 0.05$), indicating a significant difference in pain intensity before and after the intervention within the intervention group. This finding suggests that classical music therapy has a substantial effect on reducing pain scale in post-cesarean section patients. Therefore, it can be concluded that classical music therapy is an effective non-pharmacological intervention for alleviating postoperative pain in postpartum women.

Based on these results, it is recommended that healthcare professionals consider the use of classical music therapy as a complementary alternative in managing postoperative pain following cesarean section. This intervention is easy to implement, safe, and can enhance maternal comfort during the postoperative recovery period.

REFERENCES

Beraldo, C. de S. (2022). *Caesarean Section* (pp. 143–156). CRC Press eBooks. https://doi.org/10.1201/9781003034360-16

Chehreh, R., & Tavan, H. (2023). The effect of music therapy on labor pain: Systematic review and meta-analysis. *Douleurs: Evaluation - Diagnostic - Traitement, 24*(3), 110–117. https://doi.org/10.1016/j.douler.2023.03.002

Demirtas Hicyilmaz, B., & Cirpanli, C. (2022). Postcesarean Difficulties and their Association with Breastfeeding Success in Postpartum Women. *Nigerian Journal of Clinical Practice, 25*(1), 69. https://doi.org/10.4103/njcp.njcp_546_20

El Haque, I. T., Roslianti, E., Heryani, H., & Desry, D. (2022). Giving Classical Music Therapy to Reduce Pain Intensity in Post Sectio Caesarea Patients. *JURNAL VNUS (Vocational Nursing Sciences)*. https://doi.org/10.52221/jvnus.v4i2.316

Fibriansari, R. D. F., Hayati, N., Wahyuningsih, S., & Bilih, N. (2022). Exploration Postpartum Sectio Caesarea with Ineffective Breastfeeding: A Case Report. *D'Nursing and Health Journal (DNHJ), 3*(1), 34–44. https://doi.org/10.61595/dnursing.v3i1.382

Louwen, F., Schneider, H., Marschalek, J., Husslein, P., Jennewein, L., & von Kaisenberg, C. S. (2022). *Sectio caesarea* (pp. 1–20). Springer Nature. https://doi.org/10.1007/978-3-662-44369-9_36-2

Manurung, H. J., & Kuncoro, H. T. (2024). Beyond Pharmacotherapy: Investigating the Role of Classical Music in Preoperative Anxiety Management for Cesarean Sections. *Open Access Indonesian Journal of Medical Reviews, 4*(3), 668–680. https://doi.org/10.37275/oaijmr.v4i3.629

Mas'adah, M., & Rusmini, R. (2018). Teknik meningkatkan dan memperlancar produksi asi pada ibu post sectio caesaria. *Jurnal Kesehatan Perintis, 9*(2), 1495–1505. https://doi.org/10.32807/JKP.V9I2.71

Merdekawati, D. (2016). Pengaruh terapi musik klasik terhadap penurunan tingkat skala nyeri pasien post operasi. *Jurnal Iptek Terapan, 10*(3). https://doi.org/10.22216/jit.2016.v10i3.526

Mutmainnah, H. S., & M. R. (2020). Efektivitas terapi musik terhadap penurunan nyeri pada pasien post operasi. *[Journal title not provided.]*

Natalina, D. (2019). *Terapi Musik Bidang Keperawatan.*

Novita, H., Tarigan, B., Sinambela, M., Novrina, R., Kesehatan, I., Husada, D., & Tua, D. (2019). Pengaruh pemberian terapi musik terhadap penurunan intensitas nyeri pada pasien pasca sectio caesarea di ruang hibrida RSU Sembiring tahun 2020. *Jurnal Penelitian Keperawatan Medik, 2*(2). http://ejournal.delihusada.ac.id/index.php/JPKM

Oktaverina, D. I. N. (2022). Pengaruh terapi musik klasik terhadap penurunan rasa nyeri post operasi sectio caesarea pada ibu nifas.

Palele, A. V. (2022). Pengaruh terapi musik instrumental untuk menurunkan nyeri post operasi sectio caesarea di RSUD Klungkung.

Potter, P. A., & Perry, A. G. (2010). *Canadian Fundamentals of Nursing.* Mosby/Elsevier.

Rini, S., Susanti, I. H., D3, P. K., Harapan, S., Purwokerto, B., Tengah, J., & Keperawatan, P. (2018). Penurunan nyeri pada ibu post sectio caesarea pasca intervensi biologic nurturing baby-led feeding. *MEDISAINS: Jurnal Ilmiah Ilmu-ilmu Kesehatan, 16*(2).

Rositawati, S. (2020). Pengaruh musik klasik Mozart terhadap intensitas nyeri pada ibu pasca sectio caesarea.

Shivanna, A. K., Spandana, S., & Vaidya, R. (2020). The clinical study of vaginal birth after caesarean section. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 9*(12), 4855. https://doi.org/10.18203/2320-1770.IJRCOG20204957

Singh, J., Scime, N. V., & Chaput, K. H. (2022). Association of Caesarean delivery and breastfeeding difficulties during the delivery hospitalization: A community-based cohort of women and full-term infants in Alberta, Canada. *Canadian Journal of Public Health, 114*(1), 104–112. https://doi.org/10.17269/s41997-022-00666-0

Solehati, T., Sholihah, A. R., Rahmawati, S., Marlina, Y., Kosasih, E., Keperawatan, F., Padjadjaran, U., Raya, J., Sumedang, B., & 21, K. M. (2022). Terapi non-farmakologi untuk mengurangi nyeri persalinan sectio caesarea: Systematic review. http://journal.stikeskendal.ac.id/index.php/PSKM

Toker, E., Demirel, G., Doganer, A., & Karakucuk, S. (2021). Effects of Turkish classical music on postpartum pain and anxiety in cesarean deliveries: A randomized controlled trial. *Alternative Therapies in Health and Medicine, 27*(5), 120–127. https://pubmed.ncbi.nlm.nih.gov/33245708/

Yorpina. (2020). Pengaruh pemberian terapi dzikir dalam menurunkan nyeri pada pasien post operasi. *Jurnal Kesehatan dan Pembangunan, 10*(20).