

Deli International Conference on Allied Sciences)	Vol. 1 No. 1	Edition: June 2026
	https://ejournal.delihusada.ac.id/index.php/deli-icas	
Received : 11 May 2026	Revised: 11 June 2026	Accepted: 19 June 2026

Differences Between Classical Music Therapy Relaxation and Lavender Aromatherapy in Reducing Pain during the First Stage of Labor

Vitrilina Hutabarat¹, Stefani Anastasia Sitepu² Masta Lena³

¹Deli Husada Deli Tua Health Institute, Jl. Besar Deli Tua no. 77, Deli Serdang, Indonesia

²Department of Midwifery, Deli Husada Deli Tua Health Institute, Indonesia

e-mail:

Keywords

: Labor pain, classical music therapy, lavender aromatherapy.

Abstract

:First-stage labor pain is a physiological experience that can affect the physical and psychological condition of the mother. Effective pain management is important to prevent excessive stress that can slow down the labor process. Non-pharmacological approaches such as classical music therapy and lavender aromatherapy are increasingly being used because they have minimal side effects and are more comfortable for the mother. The purpose of this study was to determine the difference in effectiveness between classical music therapy relaxation techniques and lavender aromatherapy in reducing first-stage pain in PMB Pera. This study used a quasi-experimental design with a pre-test and post-test approach in two groups. The number of samples was 32 mothers in active first stage labor who were divided by purposive sampling into two intervention groups. The first group was given classical music therapy, and the second group was given lavender aromatherapy. Pain intensity measurements were carried out using the Numeric Rating Scale (NRS). Data analysis was performed using the Mann-Whitney test. The results showed a significant difference in reducing pain between the music therapy and lavender aromatherapy groups with a p value = 0.006 (p <0.05). The music therapy group showed a greater reduction in pain compared to the aromatherapy group. Classical music therapy and lavender aromatherapy were equally effective in reducing pain in the first stage, but classical music therapy was superior in reducing pain intensity. Both methods can be used as non-pharmacological intervention options in labor pain management.

INTRODUCTION

determine the difference in effectiveness between these two methods in reducing pain during the active phase of the first stage of labor.

METHODS

This study used a quasi-experimental design with a pretest–posttest two-group design without randomization. The sample consisted of 32 women in active first-stage labor who were divided into two groups: the classical music therapy group ($n = 16$) and the lavender aromatherapy group ($n = 16$). Sampling was conducted using purposive sampling. Pain measurement was carried out before and after the intervention using the Numeric Rating Scale (NRS). Data were analyzed using the Shapiro–Wilk test and the Mann–Whitney test.

Comparison of Lavender Aromatherapy and Classical Music Therapy for Reducing Labor Pain Before and After Intervention

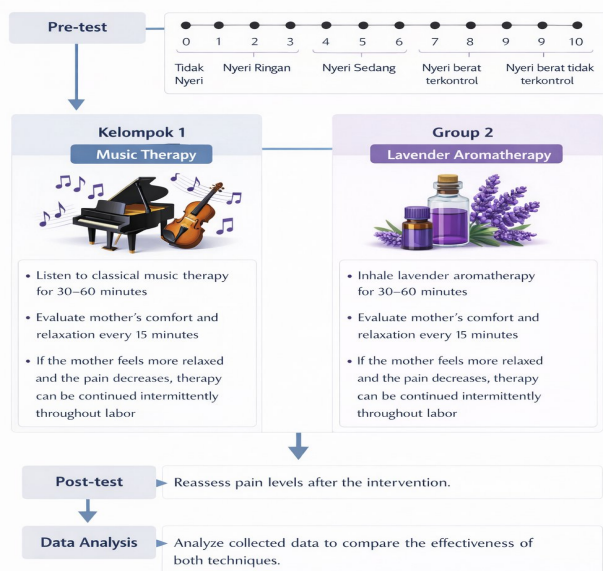


Figure 1. Research flowchart

RESULTS

The characteristics of the respondents showed that the majority were aged 26–30 years. The respondents' highest level of education was predominantly senior high school, and the highest parity characteristic was equally divided, with 8 respondents in each group. These data can be seen in the table below:

Table 1. Characteristics of Respondents Receiving Lavender Aromatherapy at PMB Pera, 2025

Characteristic	Frequency	Percentage (%)
Age		
20–25 years	6	37.5
26–30 years	7	43.8
>30 years	3	18.7
Total	16	100
Education		
Senior High School	15	93.75
College	1	6.25
Total	16	100
Parity		
Primipara	8	50
Multipara	8	50
Total	16	100

The age range of 20–25 years accounted for a frequency of 6 respondents (37.5%), while the minority group was respondents aged over 30 years, with a frequency of 3 respondents (18.7%).

Based on Table 1, it can be seen that respondent characteristics by education level show a majority frequency of 15 respondents (93.75%) with senior high school education. Meanwhile, the lowest minority in educational characteristics was respondents with higher education (college level), totaling 1 respondent (6.25%).

Based on Table 1, respondent characteristics according to parity show equal frequencies between primiparous and multiparous mothers, each with a frequency of 8 respondents (50%).

Table 2. Characteristics of Respondents Receiving Music Therapy at PMB Pera, 2025

Characteristic	Frequency	Percentage (%)
Age		
20–25 years	6	37.5
26–30 years	7	43.8
>30 years	3	18.7
Total	16	100

Education		
Elementary School	1	6.25
Junior High School	3	18.75
Senior High School	11	68.75
College	1	6.25
Total	16	100
Parity		
Primipara	10	62.5
Multipara	6	37.5
Total	16	100

Based on Table 2, it can be concluded that respondent characteristics in the music therapy group based on age show a majority frequency in the 26–30-year age range, with 7 respondents (43.8%), followed by 6 respondents (37.5%) aged 20–25 years, and a minority of 3 respondents (18.7%) aged over 30 years.

Based on Table 2, respondent characteristics according to education level show a majority frequency of 11 respondents (68.75%) with senior high school education. Meanwhile, minority educational characteristics were found at the elementary school and college levels, each with a frequency of 1 respondent (6.25%).

Based on Table 2, respondent characteristics according to parity show a majority frequency of 10 respondents (62.5%) who were primiparous, while the minority frequency consisted of 6 respondents (37.5%) who were multiparous.

Table 3. Normality Test

Group	n	p (Shapiro–Wilk)
Classical Music Therapy	16	0.184
Lavender Aromatherapy	16	0.004

The normality test results indicate that data from the classical music therapy group are normally distributed, while data from the lavender aromatherapy group are not.

The results of the Mann–Whitney test on post-test pain scores between the two groups are presented as follows:

Table 4. Mann–Whitney Test

Statistical Test	p-value
Mann–Whitney	< 0.05

Based on the results of the Mann–Whitney test, it can be seen that the Asymp. Significance (2-tailed) value is < 0.05; therefore, the null hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. It can be concluded from the Mann–Whitney test that there is a significant difference between classical music relaxation therapy and lavender aromatherapy in reducing pain during the first stage of labor at PMB Pera. Furthermore, the mean rank value for classical music relaxation therapy was 20.84, while the mean rank value for lavender aromatherapy was 12.12. This indicates a significant difference between the two interventions, with classical music therapy showing a greater reduction in pain compared to lavender aromatherapy.

DISCUSSION

Both classical music therapy and lavender aromatherapy were effective in reducing pain during the active phase of the first stage of labor; however, music therapy demonstrated a more consistent reduction in pain. Classical music can stimulate the release of endorphins, reduce stress, and enhance relaxation. Lavender aromatherapy works through the limbic system and has sedative effects, although its effectiveness depends on individual olfactory sensitivity.

The characteristics of respondents in this study consisted of three main variables: age, education, and parity. These characteristics are important to analyze because they can influence individual perceptions and responses to labor pain as well as the effectiveness of non-pharmacological interventions provided. In this study, most respondents were in the 20–25-year age group. In the music therapy group, 50% of respondents were aged 20–25 years, while in the lavender aromatherapy group, 43.75% were in this age range. This age group is included in the healthy reproductive age category; however, psychologically, younger women tend to experience higher anxiety levels due to limited childbirth experience. This condition can affect pain perception and responses to relaxation therapy.

The majority of respondents in both groups had a senior high school education. In the music therapy

group, 62.5% of respondents had completed senior high school, while in the aromatherapy group, 68.75% had the same educational level. Education level influences respondents' knowledge and understanding of information related to the labor process and pain management. Individuals with higher education levels tend to have a better understanding and are more receptive to non-pharmacological interventions as methods for pain reduction. In the music therapy group, the majority of respondents were primiparous (56.25%), and similarly in the lavender aromatherapy group (62.5%). Primiparous mothers generally experience higher levels of anxiety because they have no prior experience with childbirth. This condition makes them more responsive to relaxation interventions such as music therapy and aromatherapy. This may explain why both interventions demonstrated relatively high effectiveness in this study.

Overall, the dominant respondent characteristics were young age, secondary education, and primiparity. This combination tends to produce positive responses to relaxation interventions because this group is still in the learning and adaptation phase regarding childbirth experiences. Therefore, educational approaches and emotional support are particularly important for this group.

CONCLUSION

1. Before the intervention, both the classical music therapy group and the lavender aromatherapy group experienced pain intensity in the moderate to severe category. There was no significant difference between the two groups prior to treatment.

2. After the intervention, both classical music therapy and lavender aromatherapy resulted in a reduction in pain intensity in both groups. This indicates that both relaxation therapy methods are effective in helping reduce pain during the active phase of the first stage of labor.

3. Comparison between the two interventions showed that pain reduction was more significant in the classical music therapy group compared to the lavender aromatherapy group. The Mann–Whitney statistical test showed a p-value of 0.006 ($p < 0.05$), indicating a statistically significant difference between the two groups.

REFERENCES

- Abdullah, Dessy, Amelia, R., Dewi, N.P., Tetivani, A. and Fakultas Kedokteran (2024) *Efek Pemberian Lilin Aromaterapi pada Pengobatan Gangguan Cemas: A Literature Review*. *Journal of Psychology*, 1(1), pp. 21–32.
- Dirgahayu, I., Rustikayanti, N. and Ilmiya, N. (2022) 'Birth Ball Exercises dalam Menurunkan Intensitas Nyeri Persalinan Kala I: Literature Review', *Jurnal Keperawatan*, 14(1), pp. 1–10. <https://doi.org/10.32583/keperawatan.v14i1.7>
- Hasanah, U., Murti, B. and Prasetya, H. (2021) 'The Effectiveness of Aromatherapy and Music Therapy to Reduce Pain during Stage-I of Birth Delivery: A Meta-Analysis', *Journal of Maternal and Child Health*, 6(3), pp. 295–306. <https://doi.org/10.26911/thejmch.2021.06.03.04>
- Herinawati, Hindriati, T. and Novilda, A. (2019) 'Pengaruh Effleurage Massage terhadap Nyeri Persalinan Kala I Fase Aktif di Praktik Mandiri Bidan Nirmala Rafida dan Praktik Mandiri Bidan Latifah Kota Jambi Tahun 2019', *Jurnal Ilmiah Universitas Batanghari Jambi*, 19(3), p. 590. <https://doi.org/10.33087/jiubj.v19i3.764>
- Indriyani (2024) *Asuhan Kebidanan Persalinan dan Bayi Baru Lahir*. <https://doi.org/10.36590/penerbit.sanesia.1>
- Jahromi, A.R., Rahmanian, V., Kiani, F., Ansari, A. and Taghipour, N. (2024) 'The Effects of Iranian Traditional Music on Cervical Dilation and Labor Progress in the Active Stage of Term Pregnancy: A Nonrandomized Controlled Trial', *Health Science Reports*, 7(9), pp. 2–9. <https://doi.org/10.1002/hsr2.7005>
- Janson Rajagukguk, Manalu, D., Damanik, G.Y. and Rajagukguk, J. (2023) 'Efektivitas Kinerja Dinas Kesehatan dalam Menanggulangi Kematian Ibu Hamil dan Bayi di Kota Medan', *Strategic: Journal of Management Sciences*, 3(2), pp. 43–57. <http://jurnal.stiesultanagung.ac.id/index.php/strategic>
- Jasmine, K. (2014) *Penambahan Natrium Benzoat dan Kalium Sorbat (Antiinversi) dan Kecepatan Pengadukan sebagai Upaya Penghambatan Reaksi Inversi pada Nira Tebu*.
- Kaya, A., Yeşildere Sağlam, H., Karadağ, E. and Gürsoy, E. (2023) 'The Effectiveness of Aromatherapy in the Management of Labor Pain: A Meta-Analysis', *European Journal of Obstetrics & Gynecology and Reproductive Biology: X*, 20, pp. 0–6. <https://doi.org/10.1016/j.eurox.2023.100255>
- Konsam, M., D'Souza, S.R.B., Praharaj, S.K., Nayak, B.S., Shetty, J., Bhat, S., Noronha, J.A. and Panda, S. (2023) 'Effectiveness of music on perinatal anxiety among pregnant women and newborn behaviors: A systematic review and narrative synthesis', *Indian Journal of*

- Psychological Medicine*, 45(6), pp. 565–572.
<https://doi.org/10.1177/02537176231167077>
- Laska, Y., Siregar, M. and Hariyanti, L. (2023) 'The effect of lavender aromatherapy on reducing the intensity of labor pain in the first active phase', *Jurnal Kebidanan*, 13(1), pp. 1–8.
http://jurnal.unimus.ac.id/index.php/jur_bid/article/view/815/868
- Mahesi, N., Indahwati, L. and Fransiska, R.D. (2023) 'Efektivitas pemberian aromaterapi lavender secara inhalasi dan masase terhadap penurunan nyeri persalinan kala I', *Journal of Nursing Care & Biomolecular*, 8(1), pp. 23–84.
- Mukarromah, S., Wijayanti, I.T. and Sariyani, D. (2022) 'Penurunan nyeri persalinan kala I fase aktif dengan metode kompres hangat dan kompres dingin', *Prosiding Seminar Kesehatan Masyarakat*, 12(3), p. 10.
<https://journal2.stikeskendal.ac.id/index.php/PSKM/article/view/1979/1260>
- Nursahidah, A., Novella, S. and Suciawati, A. (2020) 'The effect of lavender aromatherapy on labor pain among delivery women', *Asian Community Health Nursing Research*, 2(1), p. 13.
<https://doi.org/10.29253/achnr.2020.21332>
- Pratiwi, D., Hadi, S.P.I., Sart, N. and Okinarum, G.Y. (2021) *Asuhan Kebidanan Komplementer dalam Mengatasi Nyeri Persalinan*. Yogyakarta: Pustaka Aksara.
- Pratama, R.N. (2024) 'Aromaterapi lavender mengurangi nyeri persalinan kala I fase aktif', *Jurnal Inspirasi Kesehatan*, 2(1), pp. 65–69.
<https://doi.org/10.52523/jika.v2i1.92>
- Roniati, R., Indah, W., Eka, P., Esmianti, F. and Poltekkes Kemenkes Bengkulu (2021) 'Pengaruh aromaterapi lavender terhadap penurunan kecemasan', *Journal of Midwifery Science and Women's Health*, 2(1), pp. 20–25.
<https://doi.org/10.36082/jmswh.v2i1.364>
- Siregar, S., Siregar, R.D. and Batubara, N.S. (2023) 'Gambaran pengetahuan ibu hamil primigravida tentang nyeri persalinan kala I', *Jurnal Kesehatan Ilmiah Indonesia*, 8(1), pp. 170–176.
- Siregar, Y.D. (2023) 'Pengaruh terapi musik klasik terhadap nyeri persalinan kala I', *Jurnal Kesehatan Ilmiah Indonesia*, 8(2), pp. 195–199.
<https://doi.org/10.51933/health.vi>
- Ulfah, S.Q. and Lestari, Y.D. (2023) 'Pengaruh teknik hypnobirthing terhadap penurunan tingkat nyeri pada persalinan: Literature review', *Jurnal Ners*, 7(2), pp. 901–907.
<https://doi.org/10.31004/jn.v7i2.16426>
- Wijayanti, I. and Wardhani, Y. (2023) 'Efektivitas terapi musik terhadap pengurangan nyeri persalinan kala I fase aktif', *Ahmar Metastasis Health Journal*, 2(4), pp. 179–184.
<https://doi.org/10.53770/amhj.v2i4>
- Zahra, D., Al, S., Permataris, I., Fitriani, C. and Universitas Borneo Tarakan (2024) 'Penurunan nyeri persalinan kala I pada masa aktif dengan menggunakan aromaterapi lavender', *Health Journal*, 8(12), pp. 392–395.
<https://doi.org/10.51933/health.v8i11.1041>