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Influence Sape Music Therapy and Endorphin Massage Against Labor Pain in the Regency Mempawah, West Kalimantan in 2025

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Abstract

Background: Labor pain can cause anxiety and fatigue, which may affect the progress of labor and fetal well-being. One approach to managing labor pain is through non-pharmacological methods, such as endorphin massage and instrumental music therapy, specifically sape music. **Objective:** To analyze the effect of endorphin massage and *sape* music therapy on labor pain before and after treatment in Mempawah Regency. **Methods:** This study employed a quasi-experimental design with a pretest– posttest nonequivalent control group design. The study population consisted of women in the active phase of the first stage of labor from August to October 2025, totaling 97 individuals. A total of 30 participants were selected, consisting of 15 participants in the intervention group who received endorphin massage combined with *sape* music therapy and 15 participants in the control group. The sampling technique used was consecutive sampling. **Results:** The mean labor pain score before and after the administration of *Sape's* music therapy and endorphin massage in the intervention group decreased from 6.33 to 4.67, while in the control group, it decreased from 6.33 to 4.66. There was a significant effect of *Sape's* music therapy and endorphin massage on labor pain (p-value < 0.001). There was no significant difference in the mean pain scores between the intervention and control groups (p = 1,000). However, after treatment, the mean labor pain score in the intervention group was lower than that in the control group (p=0.039). **Conclusion:** Endorphin massage co mbined with *sape '* music therapy was more effective than endorphin massage alone, with a mean difference of 1.000 in the endorphin massage and *sape '* music therapy group and 0.039 in the endorphin massage-only group. **Recommendation:** It is recommended that endorphin massage and *sape* music therapy be applied as alternative non-pharmacological methods for managing labor pain and further developed in future studies with larger sample sizes.

Keywords: Labor Pain, Non-pharmacological, Sape Music Therapy, Endorphin massage

Introduction

Labor is a process that requires adequate uterine contractions, frequency, duration, and intensity that can cause thinning and widening of the cervix where the process occurs during pregnancy between 37 and 42 weeks, which will emit the baby, placenta, and amniotic fluid from the uterus of the mother (1). During childbirth, naturally, every mother feels pain. This is something that is normal because the uterus contracts in a way experience For open neck uterus so that the baby can enter to door pelvis. Uterine contractions happen Because existence contracting muscles that cause muscle hypoxia, cervical dilation cervix and a lack of blood supply to the uterine corpus. Therefore, it's the women who will give birth who will feel pain, and the most dominant will feel it during the first stage of labor active (2) Labor pain can be managed through various methods, including pharmacological and non-pharmacological. One of the effective non-pharmacological methods is endorphin massage, which can stimulate the release of endorphins as an analgesic experience for the body, so that help Mother giving birth feel calmer and more relaxed (3).

Therapy music, as traditional instrumental music, can provide an endorphin massage. Research shows that instrumental music is capable of stimulating the deep delta brain waves, so help mental relaxation and stimulates endorphin production in the body (4).

Method

1. *Research design*

   Study This uses a quasi-experimental group pretest–posttest design with control. This design was chosen to determine the effect of sape music therapy and endorphin massage on labor pain, as well as allow for a comparison between group interventions and the control.

2. *Settings and samples*

1. This research was conducted in a hospital. The name of the institution is not included to maintain the generalizability of the research results. The sampling technique used was purposive sampling. That is a technique determination sample with consideration of certain customization, with objective research and criteria inclusion as well as exclusion that has been determined. Inclusion criteria are mothers giving birth in the

first stage of labor, active (opening 4–10 cm), pregnancy aterm (37–42 weeks), the mother giving birth with a single fetus, presentation head, the mother gave birth in physiological/normal condition, without obstetric complications. Willing to become a respondent and sign informed consent. Can hear well to receive speech music intervention. Not yet received analgesic pharmacological treatment before or during intervention. Criteria Exclusion: Mothers with pregnancy or childbirth complications, such as preeclampsia, eclampsia, bleeding, premature rupture of membranes with infection, or fetal distress. The sample size in this study was 30 respondents, divided into the intervention group (n = 15) and the control group (n = 15). The sample size was determined based on the total number of respondents who met the criteria during the study period.

3. *Intervention (applies to experimental studies)*

Respondents in the group intervention underwent pretest measurement. Respondents in the group intervention were measured at the measurement level, painful before giving the intervention (pretest) using the Numeric Rating Scale (NRS) on mothers' first stage of labor. Next, the respondents received intervention in the form of massage endorphins and therapy music sape ', then a return measurement of the level painful after intervention (posttest). Respondents in the group control done measurement level painful pretest and posttest, at the same time, no get intervention, only received the standard maintenance.

4. *Measurement and data collection*

Measurement level is painful. This was done using a Numeric Rating Scale (NRS) with a scale range of 0–10, where 0 indicates no pain, and 10 indicates the most severe pain that can be felt. This instrument is used to assess the subjective response to pain in mothers. The first stage of labor is active. Data collection was carried out in the intervention and control groups. In the intervention group, pain levels were measured before the intervention (pretest). Next, respondents were given endorphin massage and sape music therapy, then done return measurement level painful after intervention (posttest). In the group control, pain levels were measured at the same time before (pretest) and after (posttest) without any intervention; respondents only received standard care.

5. Data analysis;

Data analysis was performed use device software *Statistical Package for the Social Sciences* (SPSS). A univariate used for the distribution of average scores of pain in the group interventions and control groups. A bivariate done using the *Paired t test* to analyze the differences before and after in each group, as well as the *independent t* test to see the difference before and after intervention between group interventions and groups control. Significance level statistics set at $p < 0.05$.

Results

The average pain score in the intervention group before treatment was 6.33 and decreased to 4.67 after treatment. In the control group, the average pain score before the measurement was 6.33 and decreased to 4.66 at the final measurement. There were 15 respondents in each group.

Table 4.1

Average Labor Pain Score Before and After Giving Sape' Music Therapy and Endorphin Massage in the Intervention Group and the Control Group

	N	*Mean*	*Standard Deviation*	*Min*	*Max*
Intervention Pretest	15	6.33	1,047	5	8
Posttest Intervention	15	4.67	1,175	3	7
Pretest Control	15	6.33	1,046	5	8
Posttest control	15	4.66	1,175	3	7

Based on normality test results use skewness and kurtosis values, data on group intervention Good before and after treatment show skewness and kurtosis values are within normal limits, so it can be concluded that the data is normally distributed. Likewise, in the group control, good before and after measurement, the data shows normal distribution

Group	*Swekness*	*Kurtosis*	*Results*
Before Intervention	0.080	-1-102	Normal
After Intervention	0.451	-555	Normal
Before Control	0.080	-1.102	Normal

After Control	0.451	-555	Normal

Analysis results show that in the group intervention happen decline in the score painful from 6.33 down to 4.66 after treatment, with p -value = 0.000, which indicates the existence of differences. In the group control, also occurs decrease in average score of pain from 6.33 to 5.66 occurred with a p value = 0.001, so the difference was considered significant in a way statistics.

Group		*N*	*Mean*	*p-value*
Intervention	Before	15	6.33	0,000
	After		4.66	
Control	Before	15	6.33	0.001
	After		5.66	

Analysis results show that before treatment, there is no difference between group interventions and group control, with the mean value of each being 6.33, and the p-value = 1.000. After treatment, the pain score in the group intervention was lower compared to the group control, namely 4.66 and 5.66, with a p value = 0.039, so it can be concluded that there is a meaningful difference between the two groups after treatment

Group		*Mean*	*Std. Deviation*	*p-value*
Before	Intervention	6.33	1,046	
	Control	6.33	1.39 7	1,000
After	Intervention	4.66	1.17 5	
	Control	5.66	1,345	0.039

Discussion

Research results showed that after being given sape' music therapy and endorphin massage, the intervention group experienced a decrease in the intensity of labor pain, while in the control group, which also received treatment, the changes in pain were relatively small and not significant. This condition shows that Sape's music therapy and endorphin massage have a positive impact on reducing complaints of labor pain, thereby helping to increase comfort and relaxation during the labor process. According to Asman & Maifita, pain in labor can cause stress that causes tension in smooth muscle and vasoconstriction of blood vessels blood so that happen decline in uterine contractions, decreased uteroplacental circulation, reduced blood flow, and oxygen to the uterus, which makes labor painful increase many and also slows down the duration of childbirth (1).

One of the instrumental music used is sape music. Sape, also called sampe, is a musical instrument that originates from the Dayak Kenyah and Kayan tribes. Musical instruments are traditional. This start global and is loved by the international world, the melody, the sound produced from the sape, soft and easy, imbued. Sape, according to the Dayak people, is a tool of music that works for state feelings. Beginning from ancient Greek times until now, the practice of healing based on vibrational sound and healing through music is still ongoing (2).

Influence Sape's Music Therapy and Endorphin Massage on Labor Pain. Based on the research results, it shows that therapeutic music give meaningful influence on reducing labor pain in the group interventions, and groups show significant differences in scores of painful labor after therapy between group interventions and control groups. These results indicate that labor pain in the group given sape music therapy and endorphin massage was lower than in the control group. This happen Because The massage given will stimulate the body to produce endorphins. Endorphin massage therapy can also stimulate the release of the hormone oxytocin, which is responsible for triggering contractions during labor. In addition, endorphin massage therapy can also help restore normal heart rate and blood pressure. This makes this therapy an effective aid in facilitating and smoothing the labor process. Besides massage, there are also other techniques used to reduce labor pain, namely audio analgesics. This technique involves using music as a stimulus to create a sense of relaxation. The mechanism of music in stimulating relaxation involves elements of rhythm and tone that enter through the auditory canal, then are transmitted to the thalamus. This activates memories in the limbic system and automatically affects the autonomic nerves connected to the thalamus and pituitary gland. As a result, an emotional response occurs that influences the adrenal glands to suppress the release of stress hormones, so that the individual can feel more relaxed. In line with Research conducted by (4) on the effect of endorphin massage and classical music on the intensity of pain in the first stage of labor in the Sulilіran Baru Community Health Center work area showed that endorphin massage and classical music were effective in reducing labor pain, with an average reduction in pain of 3.176 with a *p-value of* 0.000. It can be concluded that endorphin massage and classical music are effective in reducing labor pain, providing a sense of comfort and relaxation to mothers

in labor, and helping them face the labor process more calmly and confidently. The combination of these two interventions can repair experienced labor and speed up the labor process. This assumes that all respondents were in good physical and psychological condition during the labor process, allowing them to respond consistently to pain. Pain scores measured before and after the intervention were considered to reflect the pain actually felt by the respondents. Sape's music therapy and endorphin massage were administered to the intervention group according to procedure, while the control group received only endorphin massage. During the study, it was assumed that no other therapies affected labor pain. The environmental conditions, measurement time, and measuring instruments were also assumed to be the same in both groups, so changes in average labor pain scores could be attributed to the administration of sape music therapy and endorphin massage.

Different sape music against the intervention group and the control group

Research results show that before treatment, there is no difference in pain level between the intervention group and the control group. This signifies that the condition beginning the second group is at a relatively the same and homogeneous level, so that the results obtained after treatment can be associated with the influence of the interventions provided. After treatment, there is a different level of pain between the intervention group and the control group show level of pain compared to the other groups, and the differences are meaningful in a way statistics. This indicates that interventions provided were effective in lower-level, painful decline-level pain. The intervention group can be explained through mechanism physiological and psychological interventions, such as massage, endorphins can stimulate the release of endorphins that function as analgesic experience in the body, so that capable of pressing the perception of pain. In addition, therapy music, including traditional music like music sape ', can give a relaxing effect, lowering anxiety, as well as divert attention of respondents from the pain felt. Meanwhile, the decline in pain that occurs in group control is influenced by natural physiological processes, the body, as well as the support environment during the treatment process. However, without any special intervention, decrease in pain in the control group, with no optimal intervention group.

Thus, the results of the study support the theory that non-pharmacological capable give contribution in management of pain, especially in midwifery services. Interventions provided have proven more effective compared to treatment in group control at a lower level painful.

Limitation

This study has limitations on the use of the purposive sampling technique and the sample size, so the results of the study cannot yet be generalized. In addition, the measurement level of pain using the Numeric Rating Scale (NRS) is subjective and influenced by the perceptions of each respondent

Conclusion

The average labor pain score before and after the administration of Sape's music therapy and endorphin massage in the intervention group was 6.33, and decreased to 4.67, and in the control group, namely, 6.33 to 4.66. There is influence therapy music sape, and massage endorphins to painful labor (*p-value* <0.00 1). There is no difference in mean pain scores between the intervention group and the control group, p = 1,000. After treatment, the average pain score in the control group intervention more low compared to the group control, p = 0.039,

Ethical Considerations

This study was implemented after getting ethical approval from the authorities. All respondents were informed of the objectives, procedures, benefits, and risks of the research, as well as requested to sign an **informed consent** sheet before participating. Confidentiality, respondent identity, and data are guarded and do not include names and are only used for research needs. Respondents are given the freedom to reject or resign themselves from the study without existence consequence to their service health.

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Conflict of Interest

Writer state that No there is a conflict of interest in studying this, both of which are financial, professional, and personal, which has the potential to affect the process as well as the results of the study.

Author contribution

Yuni plays a role in the formulation of the concept and design research, data collection, data analysis, and compilation of the manuscript. Putri Azzahroh and Bunga Tiara Carolin contributed to data interpretation, revision of the critical script, as well as agreement on the final version of the published manuscripts. All writer has read and agree script end as well as be responsible answer on all over aspect study

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